AUDIO-FOR-VIDEO • BROADCAST • INTERNET AUDIO • LIVE SOUND • MULTIMEDIA • POST PRODUCTION • RECORDING

AUDIO MEDIA

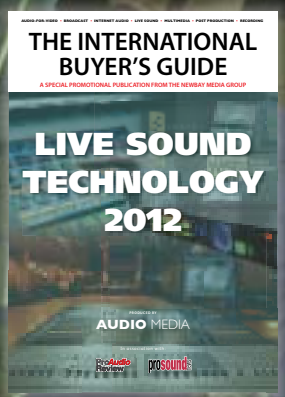
THE WORLD'S LEADING PROFESSIONAL AUDIO TECHNOLOGY MAGAZINE

Facing the Front

Royal Shakespeare Company, Matilda Sound Design, Slovak Philharmonic

Special Supplement

Live Sound Technology


THE INTERNATIONAL BUYER'S GUIDE
A SPECIAL PROMOTIONAL PUBLICATION FROM THE NEWBAY MEDIA GROUP
LIVE SOUND TECHNOLOGY 2012
AUDIO MEDIA

Objective Audio: The Great Leap Forwards?

Focal SM9

The New Pro Performer

A NEWBAY MEDIA PUBLICATION
9 770960 747024 05
WORLDWIDE EDITION
ISSUE 259 • JUNE 2012 • UK £3.80

And Also… Reviews: Midas PRO 2 V2, Antelope Eclipse, Waves Puig Child, Brainworx bx_saturator, Radial MC3 • Product Sampler: Live Consoles • Classic Cut: Alien • GeoFocus: Italy • Special Report: Networking At Infocomm • What's Up UK • Cut Scene: Develop Conference • Competition: Win 2 Mega Passes to Develop • Video Guide: A Leap Into Digital • Recording News • Post News • Broadcast News • AMSR News • And More…!

The Digital Consoles....

SD7

Redefines the boundaries of live sound mixing using Stealth Digital Processing™. Up to an incredible 256 processing paths.

SD7B (Broadcast)

Exceptional digital broadcast audio control featuring three 15-inch touchscreens.

SD7T (Theatre)

Theater version of the SD7 with a system design structure that can expand as your requirements dictate.

SD5

A new multi screen, feature rich 124 channel, 56 busses plus master and matrix console.

SD10

A potent blend of features, performance and flexibility sitting above the SD8.

SD10B (Broadcast)

A new vision of digital broadcast audio control featuring a single 15-inch touchscreen.

SD8

A breakthrough in Price Performance Ratio Powered by Stealth Digital Processing™

SD9

The future is here. A compact, world-class digital mixing system at an exceptional price.

SD11/11i/11B

A world-class digital mixing system in just 19 inches. Can be rack mounted or used as a table top mixer.

Digital control solutions for any application

Multi-Surface Mixing Solution With Huge I/O Pool, Stealth Digital Processing, Fibre Infrastructure And More.

Just why is it that many of the world's finest performing arts facilities, theatres and live events insist on DiGiCo SD Series consoles?

It could be the shared operating system, the Super FPGA and Stealth Digital Processing, the exceptional sonic performance or the system design structure that can expand as your requirements grow. It could be the configurable I/O racks, (which can be shared between consoles), the in-console effects, the option of WAVES Plug-ins, (you may not require any outboard gear), or the sheer power and flexibility. For example, the flagship SD7 provides up to 256 processing paths at 96kHz, a massive 1568 I/O connections accessible across 14 racks (on a single loop across five consoles) with full redundancy, automation, and the ability to use fibre optic infrastructure.

Whatever the reason, the truth is, when a DiGiCo SD Series multi-surface mixing solution is specified, performance and flexibility is taken to a whole new level.

STEALTH DIGITAL PROCESSING

DiGiCo

www.digico.biz

Rack Options & Solutions

SD Rack
Up to 192KHz; 56/56 I/O with SRC Madi Split; Gain tracking, Multiple connection inc. Optical

MINI Rack
4U, compatible with all SD Rack modules. MADI and optional Optical Connection.

NANO Rack
2U, compatible with all SD Rack modules. Optical Connection only.

D-Rack
32/16 I/O. Analog, AES/EBU or Aviom Output Modules. Cat5e or Optical Connection

MADI Rack
48/24 I/O. Analog or AES/EBU or Aviom Output Modules.

Waves Plug-Ins
Optional fully integrated Waves Sound Grid opens up a whole world of choice

contents

ISSUE 259 • JUNE • 2012

REGULARS

WHAT'S UP UK 16

Some are survivors, while others are casualties. KEVIN HILTON takes stock of the battleground that is the survival of British film studios.

GEOFOCUS: ITALY 18

Vatican City is the site for a storm of Tempests, while Juventus celebrates 75 years with Optocore.

CUT SCENE 20

With the Develop Conference coming round quickly, JOHN BROOMHALL finds out what's worth listening in on at the Audio Track.

SPECIAL REPORT: INFOCOMM 22

AUDIO MEDIA saves you the hassle of trawling the aisles in vain at this year's Infocomm, with some highlights of what to look out for.

VIDEO GUIDE 54

The first steps into digital TV transmission founder before reaching for greater success, finds KEVIN HILTON.

CLASSIC CUT: ALIEN 58

Prometheus will have to work hard to beat the tense, atmospheric use of sound in *Alien*, says KEVIN HILTON.

RUSHES

BRAINWORX BX_SATURATOR 26

Fatness, warmth, cream… whatever you want to call it, the bx_saturator adds a certain magic to your mix that you just won't be able to do without afterwards, says ALAN BRANCH.

RADIAL MC3 28

Sometimes the little things make most difference, and when it comes to control, the MC3's on top, says STEPHEN BENNETT.

WAVES PUIGCHILD 30

A characterful beast of a compressor that you'd be hard-pressed to tell wasn't analogue in a blindfolded test, argues SIMON TILLBROOK.

NEWS

RECORDING 6

The Bridge and The Summerhouse go Miloco, and Air goes up for grabs.

BROADCAST 8

RED I gets a new lease of life, while SSL hits the races and Riedel sports Artists and Acrobats in Turkmenistan Tower.

POST 10

Bang receives BAFTA recognition, while the deal at Twickenham falls through and The Farm gets Scrubbed up.

AMSR 12

Meyer goes four-ways musical, and Heap's Earth Day show is fully green-powered.

FEATURES

DEVELOP COMPETITION 21

Win two mega-super Super Passes to this year's Develop Conference.

3D/OBJECT SOUND 32

PAUL MAC provides an objective look at the impact new object audio formats might make in theatres up and down the country.

RSC 40

JO FLETCHER-CROSS takes a walk on stage at the newly developed theatre for the Royal Shakespeare Company.

MATILDA 42

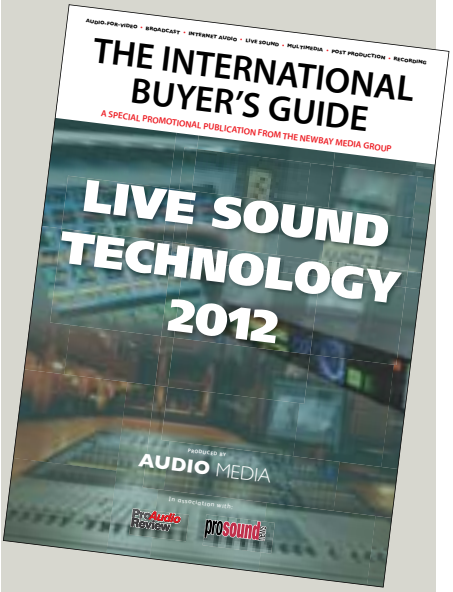
Roald Dahl's classic tale hits the West End, and is now on its way to Broadway. JO FLETCHER-CROSS finds out what's making this stage show such a roaring success.

CULTURAL BY DESIGN 44

Inegrating modern sound with historical architecture isn't always easy, but PAUL MAC visits the Slovak Philharmonic who have done just that.

Special Supplement

Live Sound Technology


THE INTERNATIONAL BUYER'S GUIDE
A SPECIAL PROMOTIONAL PUBLICATION FROM THE NEWBAY MEDIA GROUP
LIVE SOUND TECHNOLOGY 2012
AUDIO MEDIA

REVIEWS

FOCAL SM9 36

Monitoring is such a personal choice, says NIGEL PALMER, but the Focal SM9's might just be flexible enough to suit most.

ANTELOPE ECLIPSE 384 38

With its range of uses going beyond simple conversion, this is one A/D-D/A converter that STEPHEN BENNETT thinks might just take centre-stage of his set-up.

PRODUCT SAMPLER: LIVE CONSOLES 46

If it's dancing flamingoes you're after, then you're out of luck – but shiny buttons and flashing lights? AUDIO MEDIA rounds up the very flashiest of them.

MIDAS PRO2C 50

'A beast worth taming', says BEN BURNS about Midas' powerful console in a compact package.

leader

The 3D and objective audio movements are absolutely linked. The trouble is that they are linked by several different systems, and while there's nothing wrong with competition, can anybody really afford to be taking risks at the moment? Objective audio is a concept that I totally identify with and the advances are easy to see, but unless one platform comes out as an outright winner, then cinemas, productions, and studios will rightly be nervous about investing. Of course, Dolby might just have the reach and penetration into cinemas worldwide to make that happen with Atmos, but then again does the beds + objects model whole-heartedly embrace the future? As long as a helicopter can fly around the auditorium, do cinemas really care?

That's an important question. Whoever drives demand for 3D audio also drives demand for objective audio. That's why it's important for the content creators to get in there and engage with the options and possibilities as soon as possible – bring influence to bear, choose sides.

I also think that the sticky tape and scissors approach to the creation of objective audio needs to be taken out of the way as soon as possible. DAW developers need to engage with the 3D platform owners and come up with a refined object-based working approach – they already have the raw materials in the shape of region lists and audio pools, clip-based edits and automation, and more. If a mixer wants to produce a mix on more than one platform, he's not going to be happy about having to switch to proprietary panning software and re-doing everything.

And that still doesn't get around the issue of fluent 3D panning. It might just be time to break out that virtual reality kit, or one of those holographic computer modelling things that are definitely real because I've seen them on CSI. Or a game controller – dual joysticks really work for 3D movement.

We're getting ahead again. I'm sure I remember lots of rejections of the idea of discrete sources flying around when surround sound was the subject of experimentation. What has changed? More 3D movies? An increasing need for novelty? Are wholly diffuse surrounds and focused fronts a thing of the past? Well, it's certainly 'more 3D' than ever before, especially as mixers learn to trust the spatial processing that these platforms offer. And as 3D films are now commonplace, so it makes sense to have another go at the sound.

Interesting times ahead. We will be keeping you posted.

Paul Mac, Editor

AUDIOMEDIA *is a Sustaining Member of the Audio Engineering Society.*

AUDIOMEDIA

www.audiomedia.com

AUDIO MEDIA (Europe), Suite L16, South Fens Business Centre,
Fenton Way, Chatteris, Cambs, PE16 6TT
Telephone: +44 (0) 1354 669960 – Facsimile: +44 (0) 1354 669965
General E-mail: mail@audiomedia.com – Press Release E-mail: pr@audiomedia.com

Managing Director/Circulation
Angela Brown
a.brown@audiomedia.com

Group Publisher Europe
Raffaela Calabrese
r.calabrese@broadcast.it

Editor In Chief
Paul Mac
p.mac@audiomedia.com
Tel: +44 (0) 1223 911380

News/AMSR Editor
Jo Fletcher-Cross
jfcross@audiomedia.com
Tel: +44 (0)1223 911133

Production Editor
Lanna Marshall
l.marshall@audiomedia.com
Tel: +44 (0) 1223 911639

Design & Production Manager
John-Paul Shirreffs
jp.shirreffs@audiomedia.com
Tel: +44 (0) 1223 911415

European Sales Director
Graham Kirk
g.kirk@audiomedia.com
Tel: +44 (0)1223 911224

European Sales Executive
Lenette Howard
lhoward@nbmedia.com
Tel: +44 (0) 1223 911153

US Sales West Coast
Janis Crowley
jcrowley@nbmedia.com

US Sales East Coast
Paul Leifer
pleifer@media-sales.net

Subscriptions
subs@audiomedia.com
UK £43
European (airmail) £60
International (airmail) £72
Payable in Sterling through UK bank

NewBay Media

www.nbmedia.com

The contents of this publication are subject to worldwide copyright protection and reproduction in whole or in part, whether mechanical or electronic, is expressly forbidden without the prior written consent of the Publishers. Great care is taken to ensure accuracy in the preparation of this publication but neither IMAS Publishing (UK) Limited nor the Editor can be held responsible for its contents. The views expressed are those of the contributors and not necessarily those of the Publishers or Editor. The Publishers accept no responsibility for the return of unsolicited manuscripts, photographs, or artwork.

© 2012 IMAS Publishing (UK) Limited. All rights reserved.
*Within Broadcast & Production

REVIEW
Antelope Eclipse 384 **38**

RUSHES
Radial MC3 **28**

RUSHES
Waves PuigChild **30**

FEATURE
Matilda **42**

ADVERTISERS INDEX

AES Pro	10	Orban Audio	9
AKG	51	Plasa	17
Allen & Heath	47	Prism Sound	22
Avid	25	Radial	59
Calrec	39	Richmond	19
Develop	27	Riedel	23
DiGiCo	2-3	Roland (RSG)	15
DPA	24	Sennheiser	31
HHB	14	Smart AV	16
HHB Scrub	11	Source Distribution	20, 30
IMM Sound	35	Soundcraft	43
Focusrite	7	Stagetec	49
Midas	60	Ultrasone	53
Olympus	29	Yamaha	13

NEW DISTRIBUTION

Prism Sound has opened a European Sales and Distribution office in Munich, Germany. The new office will handle all Prism Sound test and measurement, music recording, and production products. One of Prism's key clients in Germany is Jünger Audio, who has just bought a third Prism Sound dScope Series III to add to its stock of audio test and measurement equipment. Jünger's Technical Support Engineer Bernd Fuhrmann is using the dScope Series III to check audio quality with sweeps, long term min/max tests, THD+N and long term bit tests. "The price/performance ration in comparison to other test equipment was a major reason for choosing it," said Furhmann.
www.prismsound.com
www.junger-audio.com

NEW PRODUCT

Black Box Analog Design has released the Black Box Microphone Pre-amp, designed by Eric Racy and Robert Wainscott, who said that they ignored standard ideas of how a pre-amp 'should' work and applied their own practical, in-studio knowledge. "I approached the design in the same manner I would set up for a mix session," said Wainscott. "I mixed a single tube with everything plugged in to a 'patchbay' and all the values that shape how the tube works were fluid. Everything could be changed in real time, which afforded me the room to perfect the design."
www.blackboxanalog.com

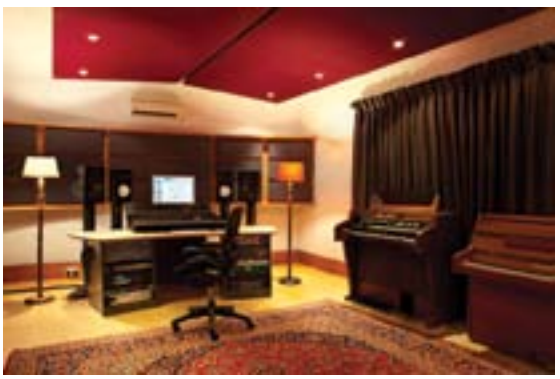
Pushing The nvelope

Studio processor manufacturer elysia has announced the release of its newest product for the 500 series, the nvelope 500. The two-space stereo dynamics processor can make subtle or drastic changes to a sound by altering its impulse structure, providing direct control over the envelope of a signal by shaping the intensity of its attack and sustain. It is primarily intended to shape individual signals, but can also be used in mixing applications as it can subtly shift a sound towards the front of a mix using more attack and less sustain, or blend it into the background by reducing its attack and increasing its sustain. The processor also offers enhanced 'tweakability' in Dual Band mode. Individual frequency controls for attack and sustain give precise results while avoiding unwanted artefacts.

"The nvelope 500 can be used on many different instruments such as drums, percussion, bass, edgy guitar, acoustic piano, and even on full mixes," said Dominik Klassen, elysia Co-founder. "Generally speaking, the impulse shaping process works optimally on audio signals with a significant/percussive attack structure." The nvelope 500 offers true dual mono or linked stereo operation in full range, dual band or EQ mode.
www.elysia.com

Audient Crosses The Bridge To Miloco

Miloco Studios has purchased two Audient ASP4816 analogue recording consoles for two of its studios; The Bridge in London, and The Summerhouse residential writing studio on Osea Island. The ASP4816 provides the key features of a large recording console in a compact size. The desks feature Audient's Class A pre-amp and four-band EQ, and come with 40 faders, 48 inputs at mix, 16 bus routing, six auxes, two dedicated cue sends, four stereo returns, stereo bus compressor, and a comprehensive monitor section.



"These consoles seemed the ideal fit for both of the studios," said Nick Young, Managing Director at Miloco. "We were looking for something compact but with versatility and in the right price range. The consoles' versatility means we can record, overdub, or mix with ease. We have put both of the desks to good use and the early feedback has been very positive."
www.miloco.co.uk
www.audient.com

SUBSCRIBER PRIZE DRAW

Congratulations to Terry Seares from Orpington, Kent, who is this months' winner of the AM subscriber's draw. Each month throughout 2012, one randomly selected subscriber will win an sE 4400a microphone. To be entered into the draw, you must have a current digital or print subscription. To get one, go online to the address below. Good luck!
www.audiomedia.com/subscribe.html

NEW PRODUCT

Eventide has released the Blackhole Native plug-in for AAX, AU, or VST, using its stompboxes as inspiration. Blackhole was available in its earliest incarnation on the DSP4000 and H8000 studio processors. "People have been having a blast with Space's Blackhole, so we thought we'd get it out from under foot and onto the desktop," said Ray Maxwell, Eventide Vice President.
www.eventide.com

NEW PRODUCT

Sonokinetic's Delphi sample library reconstructs authentic early Greek instruments, and covers a broad range of ancient texts and phrases. The 1.3GB sample pool includes Dionysian chants, Krotala Dio (small finger cymbals), Krotala Delphi (finger bells), drums, Roptron (an ancient tambourine like instrument), and Phorminx – an ancient reconstructed harp.
www.sonokinetic.net

NEW PRODUCT

Zero-G has released Modular Beats: Real Analog Beats and Kits, with 25GB of raw material made from pure analogue sources. Produced by Roger Grønberg, a sound designer from Norway who specialises in physical modelling and sound invention, Modular Beats has oscillators and noise generators as the basis of each sound.
www.zero-g.co.uk

NEW USER

Cambridge-based Collegium Records has expanded its 16-channel NTP DAD AX24 system to 24 channels for the production of a new album celebrating choral music heard on

royal occasions during the lifetime of Elizabeth II. "The AX24 incorporates high quality microphone pre-amplification and analogue-to-digital conversion in a single system," said Composer, Conductor, Producer and Editor John Rutter.

www.ntp.dk

NEW PRODUCT

Roklocker is a new product that provides protection for the iLok. A large percentage of professional audio software is now authorised via an iLok. When enclosed in a Roklocker, the iLok is protected against being dropped, snapped, stepped on, or against liquid spills. The Roklocker comes in four different colour combinations.

www.roklocker.com

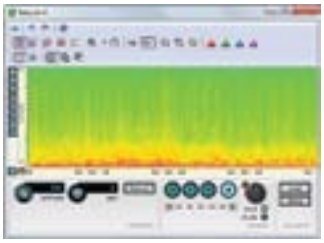
Air For Sale

London's Air Studios is being offered for sale as a going concern. Richard Boote, who bought the studio from Sir George Martin six years ago, has decided to concentrate all his efforts on the new businesses set up over the last two years by the Air Entertainment Group, including Strongroom Alive Radio, development of apps, and a digital distribution platform to be launched soon.

Air Studios was established in 1969 by Sir George Martin in Oxford Street, moving to its current location, a converted Victorian church in Hampstead, in 1992. Alongside the large orchestral studios are recording studios used by artists such as George Michael and Coldplay. The main hall of the studios is used regularly for live concerts and television recordings. "Air Studios is a profitable part of our business, and the decision to put Air on the market has been a difficult one," said Boote. "However with the Group's vision of content creation and a more public-facing focus, it was felt that the Studios would benefit longer term from having an owner that will continue its great recording heritage that keeps it on a par with Abbey Road."

www.airstudios.com

LICENCE AGREEMENT



CEDAR Audio has announced that it has entered into a licence agreement with iZotope, granting iZotope a non-exclusive licence to the patent for use in the iZotope RX 2 Spectral Repair module. "iZotope strives to provide its customers with a wide range of high quality repair tools, and CEDAR Audio has played an important role in establishing this industry," said Mark Ethier, CEO of iZotope. "We're happy to be working with CEDAR to provide these solutions to our customers."

www.cedaraudio.com

In 1987 Focusrite, then owned by Mr Rupert Neve, introduced the ISA 110 wide bandwidth Microphone preamplifier and EQ module, designed at the request of Beatles producer Sir George Martin for the custom Neve consoles at his AIR Studios in London and Montserrat.

Like all ISA Range products ISA Two specs out beautifully!

- EIN is -127dB (at 60dB gain, 150 Ohm source impedance).
- Noise at main output is -97 dBu (22Hz-22kHz bandpass filter).
- Frequency response at 60dB gain -2.5dB at 20Hz., -3dB at 120kHz.

This was the genesis of the Focusrite brand and an uninterrupted progression of the ISA family from then until now. The ISA (Input Signal Amplifier) microphone preamplifier, featuring a Lundahl input transformer and proprietary Zobel network, has remained essentially unchanged and at the heart of every ISA Range product and of course the famous Focusrite Studio consoles.

Announcing the latest chapter in the ISA legacy, ISA Two.

Responding to numerous requests Focusrite is pleased to offer two channels of this highly praised mic pre in a 1U, 19" rack-mounted format. The only things we've added to the original design are four switchable input impedances, balanced inserts and two useful user-calibrated eight LED output meters.

At the heart of every great studio is great sound. That will be your legacy.
It's ours too - Sound is Everything.

Focusrite®

SSL GOES TO THE RACES

Solid State Logic C100 Digital Broadcast Consoles have been installed in three new HD OB vehicles to capture audio for live horse racing events for G.T.H.P (Groupement Technique des Hippodromes Parisiens) in France. The company provides technical resources and staff for live-to-air and re-transmission media coverage of horse racing events for the Equidia TV channel locally, as well as for international distribution. All three HD OB vehicles feature a single C100 frame fitted with two independent consoles, each with completely separate master sections and associated fader bays – one 24+8 and one 16+8.
www.solidstatelogic.com

RIEDEL CONNECTS TURKMENISTAN

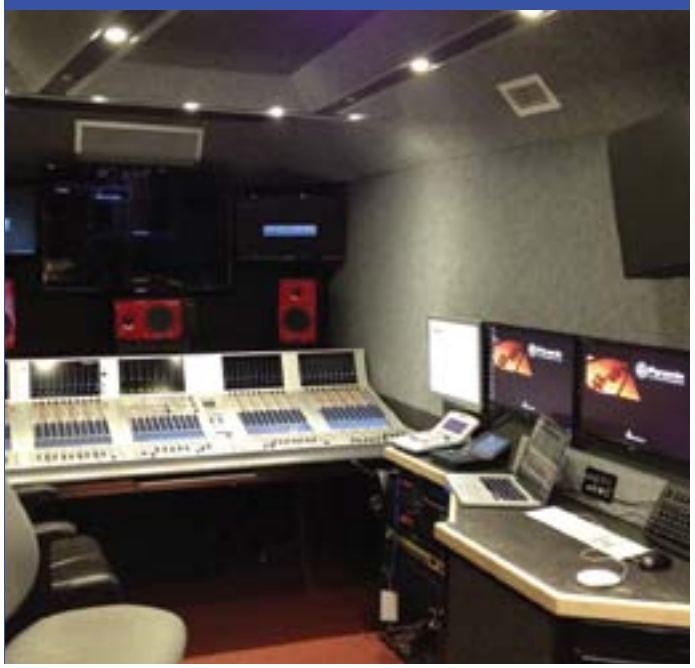
The Turkmenistan TV tower, at a height of 211 metres and at an elevation of nearly 1,000 metres above the capital city of Ashgabat, was one of the most ambitious broadcast projects in the central Asian region. Built in just 18 months, the tower runs on a comprehensive communications infrastructure from Riedel Communications. Riedel delivered a flexible system combining Artist Digital Matrix and Acrobat Digital Wireless Intercom for the tower's studios and the OB trucks. The tower transmits six channels, of which four broadcast in SD, while two are in HD. It also houses various other broadcast studios, an OB truck fleet, and the transmission facilities of the channels.
www.riedel.net

Painting The Truck Red

Broadcast sound specialist Red TX has completely rebuilt its RED I mobile recording unit to bring it up to the same specifications as RED II, which was refurbished last year. The interior of the unit has been transformed, with an internal wall being moved to create more space for audio engineers and clients. New PMC ALM 1 active 7.1 surround space monitoring has been installed, and the acoustics and insulation improved to remove distractions from external noise.

Like RED II, RED I is equipped with a Studer Vista 8 digital mixing system. Recording is carried out via Pyramix, Pro Tools, and Logic, and there is also an extensive range of digital effects on board. The truck also includes 96 x 24/96 remote microphone amps, with additional blocks of 48 – up to 240 – available for larger projects. "Having two state of the art trucks on the road has allowed us to increase workflow and offer clients the very latest audio for broadcast technology," said Ian Dyckhoff, Managing Director of Red TX. "With all popular record formats available, the truck is well equipped to handle any audio challenge."

Since completing the renovation, Red TX has used RED I on a number of projects, including recording MTV Presents Titanic Live in Belfast, and recording the world premiere in London of Titanic Requiem, a new classical piece written by the late former Bee Gee Robin Gibb.
www.red-tx.com



Olympic Monitoring From TSL

The BBC has taken delivery of more than 40 TSL PAM2 multi-channel audio monitoring unites for standardised use across its Olympic broadcast facility within the IBC (International Broadcast Centre). The 46 PAM2 units, supplied by Dega Broadcast Systems, will sit across numerous operator positions in the temporary facility for the duration of the games, including the BBC's VT editing suites and playout desks, main MCR, three main TV galleries and the commentary line-up area. TSL is customising the firmware and software within the PAM units specifically for the BBC's 2012 Olympic requirements, which will remove the need to install extra equipment such as additional audio monitoring hardware, mixers and outboard metering. As well as content for BBC1, BBC2, BBC3, and BBC Radio, the facility within the IBC will also be producing 24 simultaneous HD channels, allowing viewers to watch every venue from first thing in the morning to last thing at night.
www.tsl.co.uk

SADIE EXPANDS WITH BBC

The BBC has expanded its SADiE editing capabilities by ordering another 250 systems, less than a year after installing 50 SADiE 6 editing systems at BBC North in Salford. The new systems will be strategically located in the Corporation's radio studios around the UK. Graham Boswell, Sales Director of Prism Sound, said: "We are delighted that the BBC is making SADiE 6 available to many more of its radio production employees and we feel confident that they will appreciate the benefits that SADiE 6 brings."
www.sadie.com

SOUNDFIELD IN RICHMOND

London-based audio and broadcast equipment hire company Richmond Film Services has upgraded one its trio of SoundField ST250 portable microphones, replacing it with the recently launched ST450. "We got one of the new ST450s, and it's proved very popular amongst our rental clients so far," said Nigel Woodford, Co-founder of Richmond Film Services. "It's more convenient for many location recordists, because the ST450 can output four line-level signals, which suits users of some portable four-channel recorders better."
www.richmondfilmservices.co.uk

SHANGHAI UPDATES WITH SOUNDCRAFT

Shanghai Media Group (SMG), recently updated its studio in Pudong with a Harman Soundcraft Vi1 digital audio console. SMG is one of Soundcraft's longest-served customers; before upgrading to the Vi1, the studio had a Soundcraft B400 analogue mixer. The project team in charge of budgeting for a new console identified four key factors that swung the deal in Soundcraft's favour – the Vi1's DSP processing technology; the 40-bit floating point processing technology; the easy to use Vistonics interface; and the ability to associate controls with different colours.
www.harman.com

Sound that keeps audiences listening

The OPTIMOD 8685 is Orban's second-generation Surround/2.0 Television Loudness Controller with AES input/output capabilities that include support for SDI/HD-SDI up to 3.0 Gbit/s and optional Dolby E decoding and encoding.

In addition to 7.1 or 5.1 surround processing, the 8685 can simultaneously provide up to four channels 2.0 or eight channels 1.0 audio processing allowing it to provide all the audio processing necessary for a typical ATSC broadcast with multiple subchannels or language processing.

The 8685 is dialnorm-aware. Loudness control is excellent when measured to the relevant loudness standards EBU R128, ITU-R BS.1770-2/1771, ATSC A/85 and ARIB or by the 8685's built in Loudness Meters allowing Television stations to comply effortlessly with legal requirements.

The combination of our highly refined Loudness Controller, which uses a true multi-band psychoacoustic model and Two-Band or Five-Band processing is audio that sounds smooth and natural, particularly during transitions between program material and commercials.

The 8685 2.0 downmix output has a dedicated loudness controller and loudness meter, which offers 50 µs or 75 µs pre-emphasis limiting to drive an analog TV transmitter for simulcasting analog and digital DTV.

To minimize latency and to achieve highest reliability, the 8685 uses a dual hardware architecture. Dual-core DSP chips do all audio processing while a separate microcontroller supports the GUI and control functions.

The dual redundant power supplies help ensure maximum up-time.

OPTIMOD 8685

orban

ORBAN Headquarters | 8350 East Evans, Suite C4 | Scottsdale, AZ. 85260 USA
[p] +1 480.403.8300 | [f] +1 480.403.8301 | www.orban.com

ORBAN Europe GmbH | Businesspark Monreposstr. 55 | 71634 Ludwigsburg Germany
[p] +49 7141 22 66 0 | [f] +49 7141 22 66 7 | www.orban-europe.eu

8685201 2_Lo_am

Crafty BAFTAs Go With A Bang

The 2012 British Academy Television Craft Awards ceremony took place at The Brewery in London on 13 May. Nominees in the Sound: Fiction category were *Sherlock (A Scandal In Belgravia)*, *Birdsong*, *Great Expectations*, and *The Hour*. Bang Post Production, based in Cardiff, won the award for their work on Sherlock. Doug Sinclair, who picked up the award alongside John Mooney, Jeremy Child, and Howard Bargoff, said: "I can honestly say it's an absolute pleasure to be involved with." Sinclair set up the post production house with Co-director Paul McFadden in 2006. McFadden said: "This award is the highlight of our career. For a small company like ours to win such a prestigious award when we were up against the big boys of London is a fantastic honour."

Frozen Planet (To The Ends Of The Earth) took the Sound: Factual award, with other nominees including *The Choir: Military Wives*, *Rostropovich: The Genius of the Cello*, and *The Royal Wedding (Service in Westminster Abbey)*.

www.bafta.org
www.bangpostproduction.com

aes
PRO·AUDIO
Meet the all new
AES Pro Audio
RPN1101
NEVE VR Channel in a box
The Channel in a Box (CIB) is based around the Input & Dynamics sub-assembly and the EQ & Insert sub-assembly from a NEVE VR channel. The CIB comprises a 1U high enclosure with a depth of 300mm (excluding connectors and control knobs) and an internal power supply.
"The objective was to design a product that maximised the facilities that are available on the VR sub-assemblies... This objective has not only been achieved, but we feel, exceeded"
want to find out more about what's under the covers?
aes
PRO·AUDIO
www.aesproaudio.com · +44 (0)1932 873 672 · aesaudio@intonet.co.uk

FARM MACHINERY

Scrub, HHB Communications' Soho-based post-production office, has equipped The Farm Group with the UK's largest installation of AVID Pro Tools HDX and Pro Tools 10 HD software. |Scrub recently completed the installation of 12 HDX systems across three of The Farm's Soho post houses. Scrub worked closely with The Farm's technical team to deliver and complete all upgrades during the facilities only scheduling break last March – a small window between the completion of *The X-Factor* and *Britain's Got Talent*. "Our daily workflow has benefitted greatly from the significant new features and speed of the new Pro Tools HDX systems," said Anthony Kirkland from The Farm Group. "There was a very tight turn around for this upgrade, and Scrub worked with us to make sure we had a seamless transition."

www.hhb.co.uk

WHO WILL BUY?

The mystery buyer who laid down a £100,000 deposit for the purchase of Twickenham Film Studios last month, backed out on Friday 18 May for 'personal reasons'. Gerald Krasner of administrators Begbies-Traynor remains adamant that Twickenham Film Studios is only for sale for use as a studio. The joint administrators have prepared a sales pack that will be issued to any interested party on completion of a confidentiality statement, meaning that it will not be possible to find out who is bidding before the deal is concluded. At the moment there are apparently 45 interested parties.

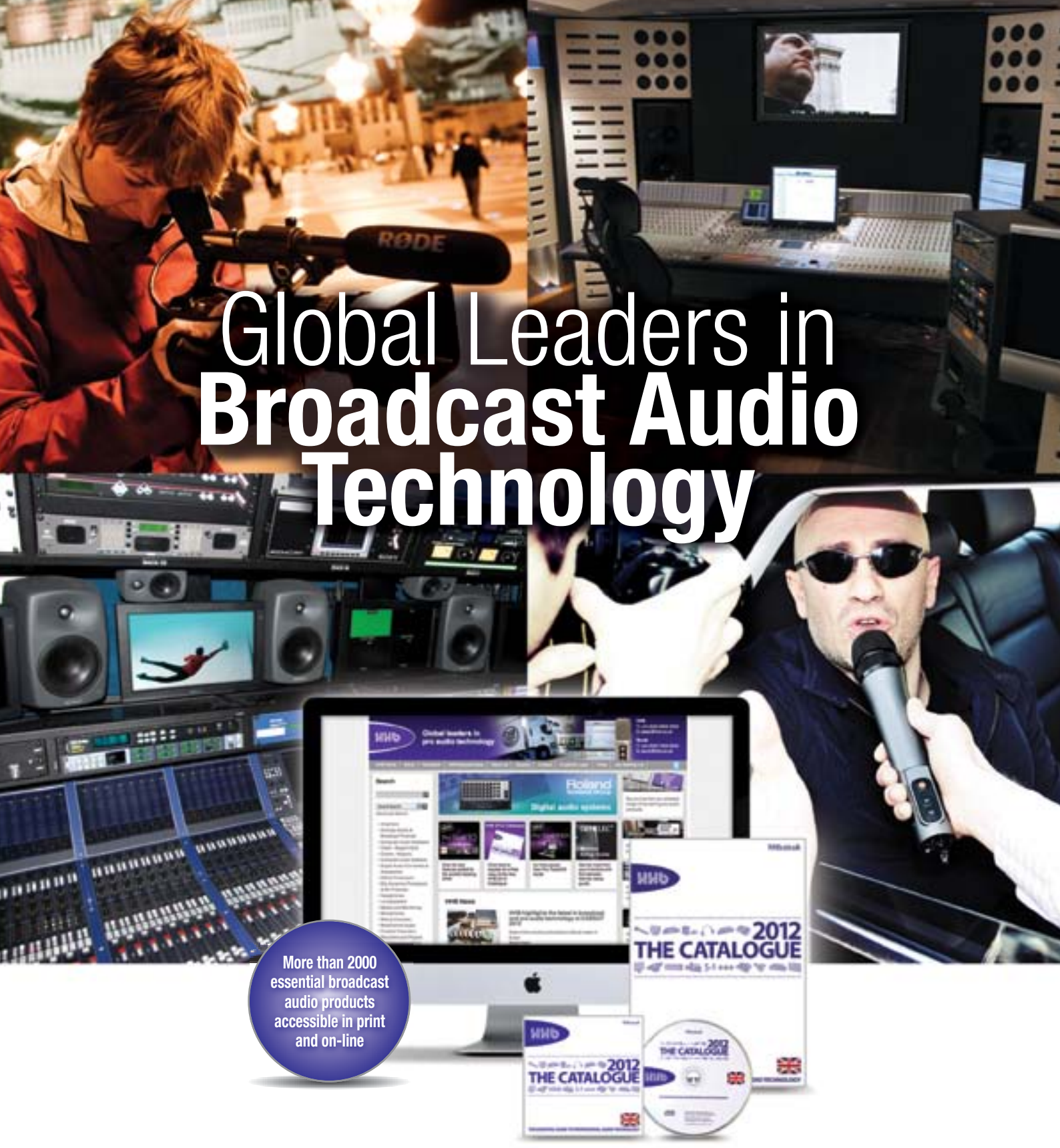
www.twickenhamfilmstudios.com

CUE HACKENBACKER

Post-production facility Hackenbacker has become one of the UK's early investors in VoiceQ, a cueing software solution for recording ADR and dubbing film and TV projects for international markets.

VoiceQ works by superimposing a scrolling script over the film that is in sync with the original dialogue, giving actors and technicians a very accurate cue. It also features traditional cueing methods like wipes and beeps. Used during post-production with Pro Tools or other DAWs, VoiceQ streamlines looping sessions and saves time and money in the studio. Hackenbacker's Chris Stumer said: "VoiceQ is incredibly easy to use and is much faster than traditional ADR methods."

www.hackenbacker.com



Broadcast · Post · TV · Radio

With 36 years of experience in broadcast sound, HHB Communications is firmly established as the audio technology supplier of choice for broadcasters and systems integrators worldwide. Our London headquarters is home to a knowledgable sales team with real-world broadcast experience, and Europe's largest independent pro audio technical facility, equipping HHB to offer valuable advice and levels of service and product support that other suppliers simply cannot match.

From a microphone to a complete studio, we look forward to assisting you with your next project.

Scrub (A division of HHB) – Located in Soho, focused on the audio technology needs of the post-production community.

HHB: T: +44 (0)20 8962 5000 E: sales@hhb.co.uk
Scrub: T: +44 (0)20 7025 6020 E: scrubsales@hhb.co.uk
www.hhb.co.uk

HHB FIRST WE LISTEN

scrub A DIVISION OF HHB

FIELD REPORT

Bruce Springsteen's Wrecking Ball tour kicked off recently at Atlanta's Phillips Arena, with an L-Acoustics K1/KUDO WST line source system. The system provided for the tour consists of 60 K1 enclosures, 16 K1-SB subwoofers, 28 KARAs, 48 KUDOs, and eight SB28 subs. In many venues the audience is in 360-degrees as the set design allows for unobstructed views from the rear. When necessary, 16 V-DOSC cabinets are brought along to provide delay fill.
www.l-acoustics.com

FIELD REPORT

Allen & Heath's iLive digital mixing system was selected by promotors Cato Music to manage FOH and monitors on the British Music Embassy stage at this year's SXSW festival in Austin, Texas. Showcasing new UK bands and artists, the British Music Embassy was based at downtown Austin's Latitude 30 club, where an iDR-48 MixRack and iLive-T112 Control Surface was installed at FOH, digitally split using a Dante networking card to a duplicate iDR-48/T112 for monitors.
www.allen-heath.com

FIELD REPORT

The Lyric Opera of Chicago selected a Meyer Sound system for its recent production of Show Boat. The company chose a system comprised of 10 M2D line array loudspeakers, 16 MM-4XP self-powered loudspeakers, two CQ-1 loudspeakers, one 700-HP subwoofer, a Galileo loudspeaker management system, and two MPS-488HPe power supply units. Drew Landmesser, Production and Technical Director for the company said it was an "elegant solution for getting a lot of sound into the house yet being really precise about where that sound is going."
www.meyersound.com

Heap Of Green Credentials For Sennheiser

Grammy-award winning singer Imogen Heap staged a live show to coincide with the annual Earth Day that was as close to completely 'green' as possible, including electricity generated entirely from renewable sources on site, and zero noise pollution. Sennheiser UK supported the event with the provision of equipment and technical advice. Taking place in Heap's Essex, UK, garden in front of specially invited guests, plus an audience of half a million watching via a live relay on Facebook and the artist's website, the central part of the show was a 'silent gig', which featured the assembled guests wearing Sennheiser RS 120 headsets to hear the performance.

The event was powered by batteries charged by a combination of a bio-diesel generator, solar power, and 15 riders pedalling fixed bicycles. "The aim was to draw no power at all from the National Grid, so the main focus for us was to ensure that we drew as little power as possible," said Chris McCarron, Director of Silentgig, the Falkirk-based company who supplied the audio infrastructure.

Kumar Kamalagharan, Heap's Tour and Production Manager, said: "In terms of the sound, we did everything as we normally would. The change was primarily in our mental approach – we opted wherever possible for low-power equipment, we were very diligent in only using power when it was necessary and turning things off when they weren't needed."
www.sennheiser.co.uk

Professor Green Decides To ADLIB

ADLIB's audio division provided the sound equipment and crew for the recent sold-out Professor Green spring UK tour, the rapper's first carrying a full production. Production Manager Trigger asked ADLIB on board, with FOH engineer Pat Tunbridge requesting an L-Acoustics V-DOSC rig with a Midas Pro6 as his mixing desk of choice. Monitor Engineer Ben Kingman chose to mix using a Yamaha PM5D. ADLIB's team was led by Systems Engineers James Neale and Michael Flaherty, looking after FOH and monitors respectively. The FOH arrays at the largest venues comprised 10xV-DOSC cabinets per side, and three dV-DOSC downs, together with eight SB28 subs per side, ground stacked. In addition to these, three ARCs cabinets per side provided front fill at Brixton Academy, with two L-Acoustics Karas positioned along the front of the stage. All this was controlled via one of ADLIB's standard Lake processing racks. The main system was driven with L-Acoustics LA8 amplifiers.

www.adlibsolutions.co.uk

NEW PRODUCT

Dynacord has launched a new mixer, the PowerMate 600-3, suitable for applications in which few channels but very high amplifier output are required. The PowerMate 600-3 weighs just nine kilos, but has a total output of over 2000 watts, making it one of the most powerful compact mixers in its class on the market. The mixer features extremely low-noise and low-hum electronically balanced XLR microphone inputs, stereo line channels, digital audio interface, PC-MIDI interface, and a master section that features a nine-band master stereo equaliser.
www.dynacord.com

FIELD REPORT

An Innovason Eclipse digital mixing console was at the heart of the audio management and distribution for the investiture of the new French President, Francois Hollande, on May 15. The Eclipse handled all the sound for the speeches in the Salle des Fetes at the Hotel de Ville city hall, which was then broadcast outside the building for the spectators gathered in front, and then clean feeds distributed to 52 different media organisations for broadcast to radio and television stations around the world. The desk was purchased last year by the Mairie of Paris for just such an occasion.
www.innovason.com

With 25 years experience designing the world's most popular digital consoles, it's fair to say that we've set the standards high in usability, performance and reliability. Now we're raising the bar for sound.

From input to output, Yamaha CL series digital mixing consoles are designed to deliver the perfect sound for any application, empowering live sound engineers with comprehensive, studio-quality sound-shaping tools and unprecedented flexibility.

Effect Rack - Over 50 Powerful Effects

Effect Rack allows simultaneous use of up to 8 effects from a selection of 46 ambience effects and 8 insertion effects, all of outstanding quality. Any of the 8 effects in the Effect Rack can be replaced by Graphic EQ units as needed.

High Quality Audio Networking

CL series consoles support up to eight I/O racks via the 32-bit Dante™ network audio protocol, offering high quality mic/line inputs with high resolution gain compensation.

Studio-Class Premium Rack

The new Premium Rack unlocks the ability to use some of the most highly regarded studio effects in your live mixes, like the Rupert Neve Designs Portico 5033 Equalizer and Portico 5043 Compressor/Limiter.

CONNECT WITH EXPERIENCE | YAMAHACOMMERCIALAUDIO.COM

YAMAHA commercial audio

FIELD REPORT

UK lighting and sound rental company Entec provided lighting, rigging, sound equipment, and crew, plus site and local co-ordination services for Japanese rockers L'Arc-en-Ciel at Le Zenith in Paris and Indigo at the O2 Arena in London. A large d&b racks-and-stacks system, into which the band hooked their own control and monitor system, featuring an Avid Profile console for FOH and a Yamaha PM5D onstage, was used at Le Zenith. The system was controlled with Dolby Lake processing and driven by d&b D12 amplifiers. For the Indigo show the same service was provided, with a slightly reduced kit list as the band used the house JBL VerTec system.
www.entec-soundandlight.com

Masque On At Tony Awards

New York-based theatrical sound reinforcement, installation, and design company Masque Sound will be celebrating the results of the Best Musical category at the Tony Awards this year no matter what the outcome, as all four shows nominated for the award used custom audio packages provided by the company. The team of experts at Masque Sound worked in consultation with sound designers Clive Goodwin (*Once*), Ken Travis (*Newsies*), John Shivers (*Leap Of Faith*), and Brian Ronan (*Nice Work If You Can Get It*), to provide the designers with the equipment they needed.

"The four nominated musicals all have incredibly talented sound designers who are passionate about their craft," said Stephanie Hansen, General Manager of Masque Sound. "From day one it has always been our goal to provide these creative professionals with the audio equipment and services they need to make their visions become a reality. It is an honour and a privilege to work with these individuals, and we couldn't be any happier that all four shows nominated for Best Musical are shows in which we have participated." The company also supplied frequency co-ordination for each of the nominated shows.

The 66th annual Tony Awards will be held on Sunday, June 10, at New York's Beacon Theatre.
www.MasqueSound.com

FIELD REPORT

D.A.S Audio provided sound at English blue and rock artist Joe Cocker's sold out show in Rosario, Argentina. Sound company Marti Audio deployed 24 sets of large format D.A.S Aero 50 line arrays, dividing the three-way systems into two linear set ups of 12 units each, flown on either side of the stage, as well as line arrays for side and front fill. Stage monitoring was handled by six D.A.S 12As.
www.dasaudio.com

NEW PRODUCT

FBT has created the Vertus CLA (Column Line Array), with the thought of integrating line array technology into a compact and elegant speaker column. The cylindrical wave front provides present and precise forward projected sound. The system is comprised of two products: CLA 604A, bi-amplified two-way active column speakers, and the CLA 208SA active subwoofer.
www.fbtaudio.co.uk

If you're serious about audio,
get serious about your cables.
LIFETIME WARRANTY
Your sound can only be as good as your cables.
So connect your equipment with Mogami professional cables that combine uncompromised signal integrity with flexibility, reliability and true value.
Microphone
Guitar
Studio
AES/EBU
Multicore
MOGAMI
CABLE FOR LIFE
Find out more at mogami.co.uk

UNBELIEVABLE

POWER, FLEXIBILITY AND SPEED
IN A SERIOUSLY SMALL FOOTPRINT

With a family of audio and video products that integrate seamlessly for live production, theatre, corporate AV, broadcast and education, we've got it covered.

- » REAC-POWERED AUDIO MIXERS
- » DIGITAL SNAKE SYSTEMS
- » MULTI-CHANNEL RECORDER/PLAYER
- » MULTI-FORMAT VIDEO MIXERS AND PROCESSORS
- » WEBSTREAMING AV MIXER
- » PERSONAL MIXING

ROLAND SYSTEMS GROUP (UK)
ATLANTIC CLOSE, SWANSEA, SA7 9FJ
T: +44 179 270-2701
WWW.ROLANDSYSTEMSGROUP.CO.UK

ROLAND SYSTEMS GROUP (EMEA)
PASEO GARCÍA FARIA
33 - 35, ESC. A 1º, 08005 BARCELONA, SPAIN
T: + 34 93 493-9117 / WWW.RSGEMEA .COM

Roland
Systems Group

FREE 1-2-1 UK TRAINING EVENTS - STARTING JUNE

EXPERIENCE THE FULL RSG PRODUCT RANGE WITH OUR FREE HANDS-ON TRAINING SESSIONS, HELD IN ASSOCIATION WITH LEADING RSG DEALERS

- » JUNE 20TH : HEYWOOD
- » JUNE 27TH : REDDITCH
- » JULY 5TH : BRISTOL
- » JULY 11TH : READING

email lisa.baldwin@rolandsg.co.uk to register

Roland
Systems Group

The War For Survival

The battleground is open and it's all to play for, as Britain's studios face a bleak future to even stay open. KEVIN HILTON looks at the casualties and survivors in the latest round.

The British love an underdog, but are often less keen on the successful. This can be seen very clearly in the differing attitudes towards two of the UK's best-known film studios, Twickenham and Pinewood. One still faces an uncertain future while the other continues to strengthen its business, despite an ongoing planning battle.

As reported in the May edition of AM, Twickenham Film Studios went into administration on February 21. The first arrangement by administrators was for selling the site in west London to property developer Taylor Wimpey. Faced with serious opposition and problems in obtaining a change in use for the premises, Taylor Wimpey withdraw its bid.

Administrator Gerald Krasner had said there were a number of potential buyers ready to step in, all of whom wanted to keep Twickenham running as a film studio and post-production centre. A new bid was accepted during April, with the applicant paying a £100,000 non-refundable deposit that guaranteed four weeks exclusivity to exchange contracts plus anonymity.

At the end of May that deal also fell apart; a statement on the studio's website explained the purchaser had pulled out "for personal reasons". On May 29, Krasner told me that he had sent out 62 confidentiality agreements, 18 of which had been returned. Sales packs have gone to these groups and Krasner has set up meetings with three interested parties that want to buy Twickenham as a going concern with the existing staff.

A Certain Future?

On the other hand, Pinewood is now as secure as any film studio can be today, with an international clientele, a growing 'media village', and backing from the Peel Group, which secured a majority stake last year.

All is not quite smooth running, however. Project Pinewood, the proposed "purpose-built living and working community for film, television, and the creative industries" has faced strong opposition from local residents. The initial submission for planning permission was rejected by South Buckinghamshire District Council; in January this year the Communities Secretary, Eric Pickles, upheld the Council's rejection of a revised application.

The central part of the argument against this ambitious scheme is the proposal to build on green belt land near the main studio site. Campaigners says the management of Pinewood, which also includes Shepperton and Teddington studios in its group, has been greedily fixated on property development, diverting its attention from the core business of making films and TV programmes.

Pinewood doubtless rejects such accusations and would point to the opening of the 30,000 square feet Richard Attenborough stage in April, along with the ongoing "master plan" for Shepperton, involving the demolition of some old buildings and the building of new ones. The group is also creating complexes abroad, including in South Africa, Australia, and China, but the ambitions for Pinewood itself are still a priority.

The group is currently discussing new plans for Project Pinewood and indications are it will focus on film production rather than anything else.

Win Some, Lose Some...

There have been numerous casualties among the UK's pioneering film studios. Denham, founded by Alexander Korda, is now an industrial estate, although nearby Beaconsfield is still in the movie business as the home of the National Film and Television School (NFTS). Riverside Studios in Hammersmith was originally owned by the Triumph Film Company in the 1930s, with the BBC taking it over in 1954. It is still used for TV production but is now better known as an arts and theatre centre.

Fountain Studios in North London, billed as the biggest fully equipped TV studio in the UK, was opened in 1926 as Wembley Park Studios and had a number of owners, including 20th Century Fox and Rediffusion. It is best known today for staging big TV shows like *The X Factor.*

Ealing Studios is another survivor. During the early 2000s new owners pledged not just to keep the site going as a production centre for hire, but also to produce its own films, which have included the resurrected St Trinian's movies.

Bray Studios near Windsor has been less fortunate. Its history is just as illustrious as that as Pinewood, Ealing, and the others. It was the long-time home of Hammer Films, still the UK's most financially successful film company. Hammer sold the site in 1970, after which it carried on doing film and TV work but became better known as a rock rehearsal venue.

The present owner says there is now no demand for Bray as a film studio and proposes to redevelop the site for housing and convert the main Grade II listed building. As with Twickenham there have been objections but it looks less likely this particular key part of UK film history will come back from the dead.

plasa2012

9 - 12 SEPTEMBER 2012 / EARLS COURT

Bigger picture | Brighter ideas

The essential international event for entertainment & installation technology

- 300 exhibitors
- 500 new products
- Free four day Professional Development Programme

Book online now and save 50% off the ticket price

www.plasashow.com

plasa events

Optocore Network for Juventus Stadium

Audio sales and rental service company, Agorà, has carried out an advanced sound and lighting installation at the new Juventus Stadium in Turin. For audio network transport and signal distribution they developed an Optocore redundant optical fibre ring system to span the new 41,000 capacity arena.

Agorà's relationship with the German fibre network specialists extends back to 2002 when the company's Italian distributors Audiosales srl first introduced them to the system.

After many years of discussions, demos, and comparative testing, Agorà rented an Optocore system to top Ukrainian football club Shakhtar Donetsk in June this year, to help the club celebrate its 75th birthday. The Optocore solution enabled remote control of all amplifiers used in the club's Donbass Arena over Ethernet.

This fully-redundant, low-latency solution was so successful that a similar system was proposed as part of the Juventus Stadium construction, on the site of the former Stadio delle Alpi.

The network, comprising 64 analogue inputs and 88 analogue outputs (plus Ethernet), was built around Optocore's new X6R-FX and X6R-TP digital converters – all connected in one giant ring involving more than 2km of fibre cable. This has provided an elegant solution by minimising the number of devices necessary for the site-wide signal distribution from 64 sources – including different digital processors in the rack rooms serving the various clusters hanging around the stadium roof and speakers placed on the playing field.

Responsible for the system design, speaker positioning, alignment, and equalisation was 'General Cluster' Daniele Tramontani, who has worked closely with the L'Aquila-based Agorá over a number of years.

To construct his Optocore ring, Tramontani drew on two X6R-FX network converters (configured 8AE/8LI) in the control room, with all 64 analogue inputs distributed via four Meyer Sound Galileo processors. A further 11 x X6R-FX- 8AE/8LO (with eight channel line outputs), along with two X6R-TP-16LI (Line Input) converters were used over Optocore's proprietary 24 ID SANE Ethernet network to distribute those audio channels to the L-Acoustics amplifiers, sited under the stand roof and on the field of play. All network cards were supplied with Phoenix connectors.

In addition, four OptoCon 4/2 expanded beam bulkheads (each equipped with two lenses) have been added to the system, giving an extra level of flexibility and scalability as the system can be interfaced directly via fibre with an OB Truck or mobile Optocore devices in a rugged environment.

Enrico Brignano on Tour with Electro-Voice

Enrico Brignano is one of the biggest stars in Italy and his tour *Tutto suo padre (Like his Father)* he has been packing theatres all over Italy. The three-hour show blends elements of cabaret, comedy, and also music into a fully rounded evening of entertainment. The music, in fact, is provided by a high-calibre 18-piece orchestra.

The demands all this places on the sound reinforcement system are twofold: the highest possible level of intelligibility – even in the furthest rows of the auditorium – and the concert sound performance of a dedicated high-end system. The task of reconciling these difficult and apparently conflicting objectives throughout the tour was entrusted to the Mariano Comense-based sound reinforcement company, Backstage P.A., which has at its disposal a comprehensive array of Electro-Voice components.

To satisfy the acoustic needs of venues with audience capacities ranging from 5,000 to 8,000, the Backstage P.A. team relied on an XLVC line array composed of XLD and XLE elements. Thirty-two flown XLD enclosures served as the main PA, whilst 24 XLD systems provided side-fill and 12 XLE elements front-fill. The necessary punch in the low frequency range was provided by two five Electro-Voice Xsubs in a Bessel array configuration.

The power was delivered by 18 Electro-Voice CP3000S and six CP4000S amplifiers, while the entire system was controlled and supervised by six Electro-Voice Dx46 and two Electro-Voice DC One sound system processors.

"The biggest challenge on this tour was without question the need for optimal intelligibility, as Enrico Brignano is a gifted speaker," says Backstage P.A.'s MD Pino di Costanzo. "This means it is imperative that everyone in the audience, regardless of where they may be sitting, is capable of understanding every word. Otherwise for them the show would lose much of its appeal."

He continues, "XLD elements are versatile, offer a very high level of intelligibility, and at the same time powerful music reproduction. Furthermore the entire line array is so compact that you hardly even notice it."

CTV Chooses Clear-Com intercoms

Clear-Com reports that Vatican Television Centre, known in Italy as Centro Televisivo Vaticano (CTV), the official broadcaster of Vatican City, has selected Eclipse-Median digital matrix and Tempest 2400 digital wireless intercoms to help cover the official activities of Pope Benedict XVI as well as the ongoing religious events and services held at the Vatican.

The extensive communication capabilities offered by the four connected Eclipse-Median, six I-Series intercom panels, two Tempest BaseStations and four Tempest BeltStations "assure that CTV broadcasts have fast access to reliable, high-quality communications".

Since 1983, CTV, headquartered in Via del Pellegrino in Vatican City, has broadcast the Pope's pastoral ministry and other activities of the Holy See. Each year, they cover about 200 events from inside the Vatican as well as during the Pope's travels in Italy and abroad. The network's footage is picked up via satellite by broadcasters, news agencies, and editing facilities around the world.

CTV has no production studios, as a majority of the broadcaster's work is ENG. The new OB van, which has full HD capability, has become the central hub for critical operations at the network. Its four operating areas include the audio room, equipment room, primary and secondary production control with VTR and camera control.

"The combination of the Eclipse digital matrix with V-Series panels and Tempest2400 gives CTV a tremendous amount of communications flexibility,

making it much less stressful to manage the broadcasting of the Pope's ministry," says Karlie Miles, Director of EMEA sales, Clear-Com.

"Our system has certainly proven to function flawlessly during critical situations. The signal transmitted from the Tempest2400 wireless intercom system easily penetrates the thick walls of the church and can travel far distances to the van. We are thrilled that CTV has entrusted Clear-Com to help deliver the Pontiff's and Vatican's message to worshippers around the world."

Bosch Equips Rimini's Palacongressi

The Palacongressi in Rimini is Italy's largest and most modern convention centre; it features 39 rooms, a maximum capacity of 9,000 people, plus "exceptional functionality and state-of-the-art technology". Bosch Security Systems won the project and was asked to install a flexible and reliable voice alarm system, in addition to sound reinforcement and interpretation technology for all conference rooms.

"Our biggest challenge was to come up with an idea of how to connect all the conference rooms and construct the audio system as a whole, combined with the interpretation solution", said Luca Galli, Product Manager of public address & conference systems at Bosch Security Systems. The aim was to achieve a reliable and smooth audio transmission from each room to all the others, to guarantee intelligibility at all times. In particular, due to the main room's multi-functional design and the ability of other rooms to be split, a very cleverly devised solution was needed

Together with its partner TEXIM, Bosch built a tailored audio web using the Electro-Voice NetMax Digital Matrix System. Each room in the convention centre was equipped with an Integrus Transmitter, Integrus Radiator, and N8000 processors. The processors were all connected to each other via a CobraNet interface. To enable the sharing of all audio and video signals, a one gigabyte redundant Ethernet was specifically built.

Applying an audio expander and the N8000 processor, means the interpretation system is capable of receiving the original language from remote rooms and sending the translation back to where it is required. "We equipped a total of 27 interpreter booths and linked them to the central control room – to avoid any delays, the cord length between interpreter booths and radiators are all identical," says Luca Galli.

Also using the CobraNet interface, the high-end digital Praesideo Public Address and Emergency Sound System was fully integrated into an Electro-Voice sound reinforcement system comprising more than 150 loudspeakers (XLE Line Array elements, ZX Series cabinets, and EVID Ceiling Series speakers), which are powered by 43 remotely controllable Precision Series Power amplifiers. Through simple fibre-optic cabling, maximum redundancy in the wiring and power management is guaranteed.

Codemasters' Stephen Root to keynote *Develop* Conference Audio Track

10-12 JULY 2012 develop in brighton

DEVELOP Conference organisers Tandem Events has announced that Codemasters' Director Of Audio, Stephen Root is to give this year's audio keynote address. Having quietly made his mark on a raft of world-class videogame productions over many years for Acclaim, Criterion/Electronic Arts, and lately for popular UK-based publishing and development hero, Codemasters, Root has become established as one of the industry's leading audio talents. His award-winning work covers the pioneering *Burnout* franchise, *Black*, *Operation Flashpoint*, F1, *DiRT*, *GRID* and many more. Reflecting on lessons learned during a career spanning nearly two decades, he will discuss what inspires him and what he sees as the critical factors for today's videogame soundtracks.

Meanwhile, the rest of the Audio Track's packed one-day programme includes the following sessions:

FIGHTING THE LOUDNESS WAR

Speaker
Garry Taylor

Audio Director
Sony Computer Entertainment Europe, Creative Services Group

Session description: For years, the lack of loudness standards in the games industry has been a problem for both developers and consumers alike. It has led to big inconsistencies in loudness between different titles, reduced dynamic range, and promoted bad audio engineering practices. At the beginning of 2011, SCE Worldwide Studios formed the Audio Standards Working Group. One of its first tasks was to tackle loudness issues on PlayStation platforms in order to give consumers a consistent loudness experience on all media playable on SCE platforms. Garry Taylor, SCEE Audio Director, looks at the work of the group, the state of current media, and the new loudness recommendations for the Sony Worldwide Studios group.

LIFE AFTER LIMBO

Speaker
Martin Stig Andersen

Composer & Sound Designer
Playdead Games

Session description: The sole creator of Limbo's award-winning music and sound, in conversation with John Broomhall. Andersen will talk about his creative mind-set, process and approach, providing an engaging insight into his fascinating, if somewhat left-field take on game audio.

PSYCHOLOGY AND GAME AUDIO

Speaker
Alistair Lindsay

Lynx STUDIO TECHNOLOGY

Legendary Lynx audio quality.
Redefined.

The new Hilo converter elevates Lynx's pristine, open, transparent audio quality to astonishing new levels - with flexibility to match.

- **Exceptional audio specifications** – Hilo is Lynx's finest sounding converter to date
- **Multiple analogue outputs** – separate line, monitor and headphone outs, each with a dedicated D/A converter
- **Multiple digital connectivity** – AES/EBU, S/PDIF, ADAT and USB2.0 all as standard
- **LCD touchscreen** – for supreme control, monitoring and diagnostics
- **Future I/O versatility** – Hilo's LSlot port accepts interface cards for a variety of protocols
- **Onboard 32x32 mixer** – mix any or all inputs to any output via the onboard low latency mix engine

Hilo
REFERENCE A/D D/A CONVERTER SYSTEM

To see how we redefined the two channel converter, visit www.lynxstudio.com

SOURCE Exclusively distributed in the UK & Ireland by Source • www.sourcedistribution.co.uk/lynx • T: 020 8962 5080

Sound Designer & Composer
Freelance

Session description: In a fascinating talk aimed as much at game designers as it is to audio personnel, Lindsay will explore basic psychology and how it relates to a player's overall experience of a game, how to use subliminal audio cues in a Pavlovian conditioning model, and how to inform the player of progress and/or consequences via subtle or unsubtle sound design.

He will look at why, as disciplines of any skill-level think and work together, all the preceding factors can lead to a greater gaming experience for the player and a better overall product for developers.

VGM-WTF? THE PAST, PRESENT & FUTURE MANIFESTO FOR ONE OF THE PLANET'S BEST LOVED ONLINE PRO GAME AUDIO COMMUNITIES

Speaker
Andrew Barnabas

Composer, Bob & Barn Ltd & VGM List Founder

Session description: Originally set up in 1998, 'VGM' (short for The Videogames Musicians List), has become a highly valued go-to forum for the daily discussion by audio professionals of all business, technical, and creative issues around making music, sound, and dialogue for games. From newbie junior dialogue editors to audio head honchos of major format holders alike , generous contributions come thick and fast from around the world, providing seriously worthwhile practical support, 24/7. Andrew Barnabas, the list's founder explores and celebrates how this phenomenon has blossomed previously and posits how it may develop in future, asking for input from the community it serves.

DUMMIES GUIDE TO MUSIC LICENSING FOR VIDEOGAMES (title tbc)

Speaker
Martin Hewett

Senior Music Supervisor
Sony Computer Entertainment Europe

Session description (tbc): Martin Hewett has an absolute wealth of knowledge and understanding of all issues around music sync for games. In a must-attend session for anyone involved or even likely to be involved in placing existing recorded music in interactive entertainment products, he will explore the commercial, practical, and creative factors and potential pitfalls that need to be actively considered for games sync.

OPEN MIC 2012

Speaker
Town Hall style discussion led by John Broomhall, Audio Track Chair and featuring a panel of special guests TBA

Session description: In keeping with DEVELOP conference tradition, Broomhall is joined by a group of experts for discussion with the audience about the current state of the art of music, sound and dialogue for games and what the future holds for game audio business, technology and creativity - over a complimentary beer with all audio delegates.

The DEVELOP conference in Brighton, supported by *Audio Media*, is Europe's premier forum for the exposition and discussion of all matters relating to the development of today's and tomorrow's videogames – from creative and technical issues through to business affairs. It runs from July 10-12, 2012 with the one-day Audio Track taking place on Thursday, July 12.

Visit www.developconference.com for further details and join the conversation:
Twitter: @developconf

Win a Super Pass!

Audio Media has two Develop conference super-passes to give away to two lucky winners.

Each pass gives full, three-day access to the entire Develop conference – a very special opportunity to learn from and to network with the growing international games development industry.

To stand a chance of winning, simply e-mail your name and contact details to develop@audiomedia.com and you will be included in the draw. Two winners will be selected at random.

The closing date for entries is June 29, 2012. Winners will be notified on July 2, 2011.

Develop In Brighton
The Develop Conference will run from July 10-12, 2012, with a series of sessions and keynote speakers addressing all the hot topics in games development – see Cut Scene for more details and some of the session highlights.

Passes for the conference are available soon via the Develop website.

Manufacturers and service providers interested in exhibiting at Develop Expo should contact Andy Lane at Tandem Events at: andy@tandemevents.co.uk

Develop In Brighton:
July 10-12, 2012

Hilton Brighton Metropole, Brighton, UK

www.develop-conference.com

***Audio Media* is the official media partner for the Develop Audio Track.**

10-12 JULY 2012
develop
in Brighton

Infocomm 2012

It's time for InfoComm 2012, the audiovisual gathering that the organisers say is the "most energising" in the world. We are here to help you direct that energy with a rundown of the highlights of the show.

InfoComm 2012 is about to take place, with the conference running from June 9-15, and the exhibition from June 13-15 at the Las Vegas Convention Center. The show is designed for professionals in the audiovisual, information communications, and systems integration industries, and showcases the latest technologies for audio, video, display, projection, lighting and staging, digital signage, conferencing, digital content creation, networking, signal distribution, and more.

As well as tens of thousands of products and services on display, there are more than 300 education seminars, workshops, and labs taking place, with a focus on technology, trends, and best practices in the industry.

There are four 'technology pavilions': audio, conferencing, digital signage, and lighting and staging. The audio pavilion has exhibitors from all over the world. You can get a free hearing test at the audio pavilion by the House Research Institute in the Central Hall, booth C5252.

There are audio demo rooms and also the Technologies for Worship pavilion, where the latest mixing and recording gear for houses of worship or corporate meetings can be test-driven. A dizzying area of products and people, so we've picked out a few things that you shouldn't miss if you're heading out to Vegas…

Merging Technologies will be exhibiting at the show, on stand C9849. On display will be the latest version of the Ovation Media Server and Sequencer, Ovation 3.0, which includes a very flexible and intuitive cue sequencer and a powerful internal mix engine. Horus, Merging's new flagship I/O system will also be on the stand.

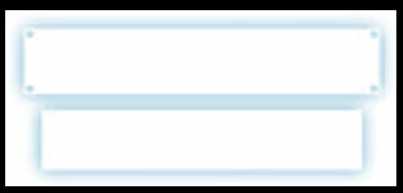
www.merging.com
Stand C9849

Tannoy, Audica, Lab.Gruppen and **Lake** will be exhibiting together, and also sharing a demonstration room (N109) where visitors can see and hear the latest product innovations. Tannoy will be demonstrating its new VLS Series passive column loudspeakers for the first time, following its formal launch at ISE 2012 in Amsterdam. Tannoy's new VSX Series subwoofer line will be unveiled in the demo room, comprised of five models of varying configurations. Lab.gruppen will be showing off the E Series amplifier range and the PLM Series. Lake has the LM 44, the brand new standalone Digital Audio System Processor, plus version 6 of its Lake Controller digital audio processing environment.

www.tannoy.com
www.labgruppen.com
www.lakeprocessing.com
Stand C10516

XTA will be showing its latest product, the DS8000 mic/line distribution system. Based on the DS800, it features microphone pre-amps designed by Gottelier award winner Alex Cooper. Also showing will be the E100 Class D Amplifier from MC^2 Audio, the company's most powerful four-channel amplifier.

www.xta.co.uk
Stand C11922



Allen & Heath will be featuring free hands-on live training sessions at the show. Sessions will alternate between the full-featured iLive digital mixing systems, and the new compact and scalable GLD system, along with daily product giveaways.

www.allen-heath.com
Stand C10123 ▸

Clearly creative.

The **Prism Sound Orpheus FireWire interface** has clearly established itself as the only solution for those looking for **unparalleled** sound quality, reliability, flexibility and peace of mind which can only come from over 25 years of leading audio expertise. Prism Sound's **state-of-the-art** clock technology and **ultra-clean** analogue signal paths provide you with the clarity to translate your creativity as you intended. Orpheus's compatibility with the latest **64bit** operating systems from Windows and Mac OS X as well as **Thunderbolt*** support ensures seamless DAW integration, both now and in the future.

Clearly Prism Sound. Clearly creative.

Prism Sound
CLEAR AS

#clearlycreative

sales@prismsound.com | www.prismsound.com | UK +44 (0)1353 648888 | USA +1 973 983 9577

*adapter required

Riedel Solutions Hotline (818) 241 4696

See you at infoComm Booth C9947

RIEDEL

Integrated Real-Time Solutions for Studios, Mobile Productions & Stadiums

SIGNAL TRANSPORT & ROUTING

- MEDIORNET
  Fiber-based Real-Time Media Network
- ROCKNET
  Performance Audio Network
- RILINK NEW
  Global Fiber Service
- PURE NEW
  Heavy-Duty Tactical Fiber Cable

VIDEO PROCESSING

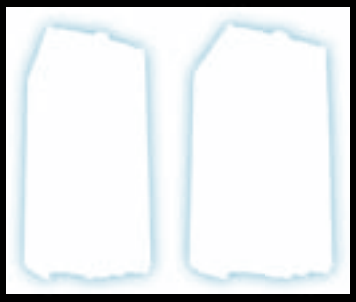
- Up- /Down-/ Cross-Conversion
- Quad Split
- Frame Store Synchronizer
- Embedder/De-Embedder
- Test Pattern Generator
- On-Screen Display
- Timecode Insertion & Display

INTERCOM

- ARTIST
  Digital Matrix Intercom
- PERFORMER
  Digital Partyline Intercom
- ACROBAT
  Digital Wireless Intercom

TWO-WAY RADIO

- RIFACE
  Universal Radio Interface
- JUGGLER
  TETRA Radio Interface
- AIR / PRO / MAX
  Radio Headsets
- MOTOROLA
  Two-way Radio Rental



L-Acoustics newest WST line source systems – ARCS Wide and ARCS Focus will be making their North American debuts at InfoComm.

www.l-acoustics.com
Stand C11949

PreSonus is presenting a live webcast direct from the show. The 30-minute presentation, Connecting Your Customers with StudioLive, will cover the broad range of advanced control and connectivity between PreSonus StudioLive consoles and laptop computers, iPads, iPhones, and iPod Touches. The presentations will be broadcast live from the PreSonus Demo room, with a live Q&A from attendees to follow each session.

www.presonus.com
Room N105

Powersoft is launching the American debut of Ottocanali 1204 DSP+ETH, a new version with onboard DSP plus Ethernet-based networking of its eight-channel amplifier; also debuting are DigiMod 2004PFC, a two-channel amplifier module, and DSP-4, a one-in/four-out board for use with DigiMod Series amp modules.

www.powersoft-audio.com
Stand C10431

The V-Series line array from **d&b audiotechnik** will be making its US debut at InfoComm, and it will also be the first time that the White range has been shown in the west of the US.

www.dbaudio.com
Stand C11528

Outline will be showing off its new EIDOS 265 LA Line Array speakers for small to medium-sized touring and installed front of house applications. The new FlySub 15 iMode and FlySub 15 Line Array Subwoofer speakers will also be on display.

www.outline.it
Stand C11549

On the **Technomad** stand will be the PowerChiton Breakout Box, a weatherproof breakout box that includes mic and line level inputs and a four-channel mixer, designed for ongoing user adjustments.

www.technomad.com
Stand C12033

DPA MICROPHONES

d:facto™ Vocal

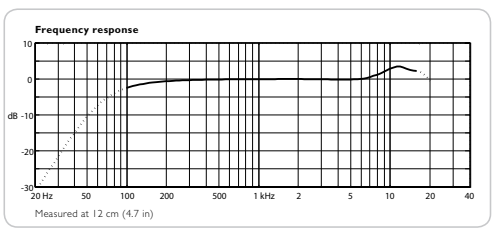
DPA takes center stage

Building on the loved qualities of the legendary DPA 4011, DPA brings the studio sound to the live stage.

With the new supercardioid d:facto™ vocal mic, DPA has once again raised the bar. Expect the unexpected.

Key features
- Extreme sound level handling, 154 dB
- 3-step pop-protection grid
- Suppression of handling noise
- Ready for wireless use
- Impressive definition, accuracy and freedom of coloration
- Superb linearity in frequency and phase, even off-axis

The perfect curve
Exceptionally linear response delivers the highest gain before feedback without EQ



www.dpamicrophones.com/dfacto

NETWORKING AT INFOCOMM

Networking at the show doesn't just involve hobnobbing with other professionals over a beer. There are plenty of opportunities to explore new developments in audio networking too.

Big news at this year's show is the AVnu Alliance's AVB (Audio/Video Bridging) technology showcase. Live demonstrations of AVB-enabled devices will show how simple A/V networking can be, with systems from 15 pro A/V equipment manufacturers and platform providers interoperate at the AVnu Alliance Pavilion. The interoperability demo will feature devices from companies including Avid, Biamp, Bosch, Harman, Meyer Sound, Riedel Communications, Sennheiser, and Yamaha, as well as platform providers Analog Devices, Audinate, Lab X, Marvell, UMAN, and XMOS.

Riedel Communications is exhibiting at the show, and is also one of six pro-audio companies that is sponsoring the AVB Networking Conference at InfoComm. Audinate will be at InfoComm, and many products on display on other booths use the company's Dante media networking solution. Visit the Audinate stand to see how Dante provides digital media networking over Ethernet.

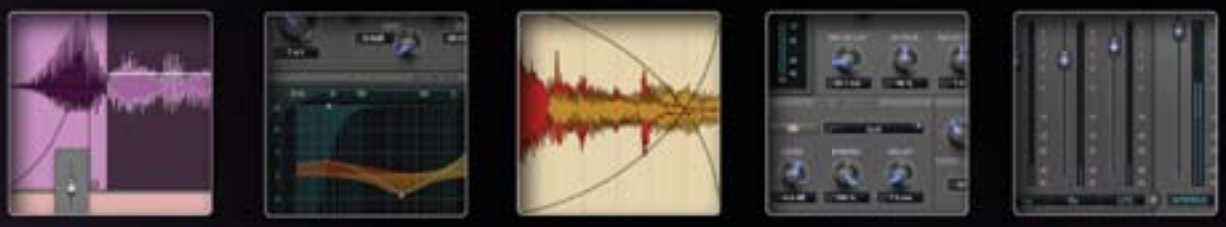
RAVENNA technology for real-time distribution of audio content in IP-based network environment will be making its impact felt. Merging Technologies in particular are highlighting the use of RAVENNA with its Horus flagship I/O system – in RAVENNA mode Horus becomes an IP 'node', fully configurable from one Ethernet cable. It allows routing on an eight-channel granularity level of up to 128 channels of MADI, 24 channels of AES/EBU and 24 channels of analogue to/from Ethernet. It also allows routing in parallel analogue to AES/EBU, MADI, and Ethernet (and vice versa). BSS Audio has a presence at the show, with a selection of products using the Soundweb and Soundweb London digital signal processing systems.

AVnu Alliance Pavilion – Stand C11309 (www.AVnu.org)
Riedel Communications – Stand C9947 (www.riedel.net)
Audinate – Stand C11246 (www.audinate.com)
Merging Technologies – Stand C9849 (www.merging.com)
BSS Audio – Stand C10719 (www.bssaudio.com)

© 2012 Avid Technology, Inc. All rights reserved. Product features, specifications, system requirements, and availability are subject to change without notice. Avid, the Avid logo, and Pro Tools are trademarks or registered trademarks of Avid Technology, Inc. in the U.S. and other countries. All other trademarks contained herein are the property of their respective owners.

Avid

A Gigantic Leap in Sound and Speed



Introducing Pro Tools 10 software

Music and audio post pros tell us that the right tools help drive their creativity, eliminate bottlenecks, and enable them to sound their best—faster. We heard you loud and clear. Introducing the new Pro Tools® 10 software—discover why Pro Tools is the #1 choice for professional music and audio production worldwide.

more info

http://apps.avid.com/nab2012

- **Speed up editing and mixing with Clip Gain**
- **Use multiple audio formats in a session—including interleaved and 32-bit float—without conversion**
- **Get better performance, new plug-ins, expanded workflows, and more**

Get the tools you deserve: **avid.com/protools**

BRAINWORX BX_SATURATOR

Audio Plug-in

Call it what you will, the bx_saturator has 'it' in bucket-loads, says ALAN BRANCH.

Saturation, tape compression, fatness, warmth, cream – whatever you want to call it – is the sought-after mix magic that engineers and producers the world over use to enhance their sounds. The Brainworx bx_saturator aims to make this easier – and better – than ever before.

What Is It?

The bx_saturator is a multi-band saturator plug-in with a difference. It splits the audio using Brainworx True=Split crossover technology into M (mid/sum) and S (side/difference), then splits each of those into two bands (hi and lo). You don't need an M/S reording to use this – the point is that the plug-in *creates* mid and side signals from any stereo signal, ready for processing and ultimately reformation at the end (however, there is a mono/multi-mono version of the plug-in's effect processing included). The four splits are processed by four XL Gain/Drive units, and there is a further audio split for the ingenius 'Mono-Maker', which I will cover later. The XL blocks are derived from the Brainworx bx_XL mastering plug-in algorithms. In all – loudness, saturation, and width control, with a nifty design and process different from any other.

One of my favourite additions to this plug-in is the Mono-Maker control. A rather clever invention from Brainworx, this control can simply mix your low end into mono, solving many low end phase problems when widening stereo mixes. I'll try and explain: drum loops often have inherent phase problems with the low end because of processing, effects, or resampling, and so on. This can mean a loss of bass and lack of impact in dynamics when trying to use them within your mix. With the Mono-Maker, a loop's high frequencies can be widened whilst keeping the bottom end solid and phase compatible.

The top main meter section of the bx _saturator has two controls: the Master XL and the Master Drive. These will increase or decrease all four XL units, Drive or XL units at the same time, keeping any individual manual changes relative to one another. It's simple to trim the effect of the whole plug-in with these two dials, whilst at the bottom end of the plug-in there is linkable output gains to set the overall output level. Unlinking these mid/side output controls allows you to adjust the stereo width by changing the ratio between the two.

In Detail

bx_saturator comes in all kinds of flavours, supporting the new AAX format, as well as AU, RTAS VST and VST 3, in 32- and 64-bit formats. With one simple installer for either PC or Mac, it will install all of these formats and authorisation is done via the Plugin Alliance website (no dongle being necessary), either offline or online, so was a breeze to install and authorise.

The bx_saturator has a very nice GUI, and operation and layout is easy to understand, featuring a Waves-style settings bar including bypass, 32 steps of undo and redo, four automatable snapshot momentary switches, a copy, paste, and reset. So there are plenty of options for storing and recalling song sections like verse, chorus, etc.

The four main split XL units are identical in operation. Each unit has three dial controls: Gain, Drive, and XL. Gain is much like a pre-amp control with a Pro and Post mode. Pre will add more gain to the input stage for extra distortion, whilst Post will control the output level without adding any extra distortion.

The 'Drive' controls how much distortion you like to apply. These Drive levels are supplemented with a selectable Level Compensation, which automatically compensates any level change.

Lastly, the XL control is like a mix percentage parameter, to adjust the mount of original to processed signal. There is also a really clever automatic solo that activates as soon as you touch any control so you can quickly hear how much distortion you're applying to each individual split of your sound.

The four XL units are separated by a set of X-Over Frequency sliders. Here you can control the frequency ranges of the Mid Hi/Mid Lo and Side Hi/Side Lo XL units, and a link option, so adjustments to either are kept relevant to one another. Look at this as a tone control for the distortion effect: you may well process a drum loop quite differently to a group of guitars, as their frequency ranges are vastly different.

In Use

The bx_saturator plug-in may seem complex in its M/S routing, but it is easy to operate, increasing the perceptive loudness and fatness to the sound without losing the impact of the dynamics, as well as adding a natural saturation distortion to the signal. The generated harmonics seem musical and natural to the source sound, all without harming the phase coherence (time) of the stereo signal. I loved using this on almost anything I threw at it. It was fun to play with, and useful in so many ways.

Distortion can come in so many flavours and this is no different, however playing with the crossover controls can really help to achieve the tonality of the sound you might be after.

Conclusion

The bx_saturator is, I think, going to become a popular tool for many engineers and producers. It produces a very impressive saturation, limiting and stereo widening possibilities, whilst keeping perfect phase coherence.

Add to that the genius idea of the Mono-Maker and it's really an all-round golden plug-in to add to your studio toolbox.

It's simple to use whether you understand the M/S process or not, as its clever GUI means you can load the plug-in and get going by simply adjusting the two main drive and XL controls, bringing loudness and saturation to drums, guitars, and even vocals.

INFORMATION

US$229.00 (download)

Brainworx
www.brainworx-music.de
www.plugin-alliance.com

THE REVIEWER

ALAN BRANCH is a freelance engineer/producer and ex-member of the On U Sound Crew. His long list of credits include Jamiroquai, Beverley Knight, M People, Simply Red, Depeche Mode, Shed 7, Sinead O' Connor, Bjork, and Sade. www.alanbranch.com

10-12 July 2012

develop in brighton

What's Happening?

Join over 1500 game developers and publishers for 100 top-notch sessions across 3 inspiring days.

EVOLVE

Tuesday 10 July
Exploring new platforms, new technologies, new business models and new markets. Come and be inspired by our industry's trendsetters tackling hot topics like internet TV, cloud gaming, multi-platform development and F2P.

DEVELOP

Wednesday 11 & Thursday 12 July
Tackling key issues, tools, tricks and techniques of game development and offering practical advice and solutions.

ART · AUDIO · BUSINESS · CODING · DESIGN · PRODUCTION · EDUCATION (NEW!) · VISIONARIES (NEW!)

indie

Wednesday 11 & Thursday 12 July
NEW **Indie Dev Marketing** and **Indie Dev Day** conferences. Plus, **Indie Dev Showcase** - featuring some of the best new indie projects around.

AUDIO

Thursday 12 July
A day of sessions dedicated to game audio and music, a practical programme with world-class speakers.

Who's Speaking?

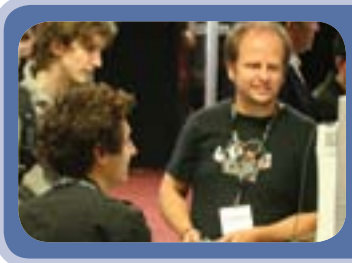
Audio Keynote
Stephen Root, Director of Audio, Codemasters

Fighting the Loudness War
Garry Taylor, Audio Director, SSCEE, Creative Services Group

Life After Limbo
Martin Stig Andersen, Composer & Sound Designer, Playdead Games

Psychology and Game Audio
Alistair Lindsay, Sound Designer & Composer

VGM-WTF? The Past, Present & Future Manifesto for One of the Planet's Best Loved Online Pro Game Audio Communities
Andrew Barnabas, Composer, Bob & Barn Ltd & VGM List Founder



Expo
Free for all visitors to attend and a great place to network and do business. Come and meet some of Europe's most innovative companies from every sector of games dev.

After Hours
Don't miss the Ice Breaker Drinks, The Develop Industry Excellence Awards organised by Intent Media, the GamesAid Poker, the Guardian Pub Quiz and much more...

www.developconference.com

International Media Sponsor: develop
Media Sponsor: EDGE
Media Sponsor: gamesindustry.biz
Media Sponsor: gd Game Developer Magazine
Media Sponsor: GAMASUTRA The Art & Business of Making Games
Media Sponsor: IMAGINE
Media Sponsor: AUDIOMEDIA
Media Sponsor: Pocket Gamer biz
Organised by: tandem events

If your desk is missing something, then the MC3 could neatly fill that hole and put you back in control, says STEPHEN BENNETT.

When you're working 'in the box,' it's likely that all that's sitting between you and your Grammy is your computer, your audio interface, and some form of monitoring. If you have an inexpensive interface it might have a single headphone socket and dedicated monitor output, while those devices further up the food chain might dispense with these niceties altogether, as the manufacturers will be expecting you to be using your SSL 4000 for these duties instead. Whatever the situation, a decent monitor controller such as the Radial MC3 under review here can provide much needed useful control if you don't use or don't have access to, a traditional desk.

RADIAL MC3

Monitor Controller

Looks Like...

Housed in a sturdy box that feels like it could survive several years in a bag knocking alongside other useful widgets, the MC3 is just 148x48x115mm in size and weighs in at just under a kilo. The controller has a nice firm felt bottom that keeps it on the desk even when festooned with cables, and the metal case is covered with a baked enamel coating with the controls and connectors neatly recessed to protect them from daily abuse. The monitor switching is passive, so the circuitry doesn't add or subtract anything from the audio passing through it – the last thing you need is your monitor controller mucking around with your audio. The front panel sports two quarter-inch headphone outputs with a single dedicated level knob, and which drove my Sennheiser 650s up to distortion-free (and career ending) levels alongside a nod to the iGeneration with a 3.5mm earbud socket. An on/off button switches the headphone feed on and off and this, along with the headphone gain control, also affect the signal sent from the rear panel Aux output – which is useful if you want to send audio to a more sophisticated headphone amp, or my favourite device, a localised FM transmitter. A supplied wall wart PSU powers the headphone amp, sub woofer output, LEDS, and associated non-audio elektrickery.

The MC3 can be used with both balanced and unbalanced cabling. All connections are via quarter-inch sockets mounted on the rear panel of the unit – I would have preferred the outputs at least to be via XLRs, as these are the connectors fitted to most active monitors, but I accept that this might have meant the device would have to be larger. Two sets of monitors and a sub woofer unit can be plugged in and their relative levels determined via recessed preset potentiometers on the top panel. I would like to have seen these protected by some type of cover – the rubber strip on the Sound Devices USB-2 springs to mind – as they were quite easy to knock out of alignment. The phase of the sub woofer can be set here as well and this, along with the sub woofer defeat button on front panel, made setting up my Genelec sub woofer a doddle. Also on the front panel there's a Dim control to reduce the monitor level to a preset amount (again set on the top panel) and a mono button to help you sort out phase issues. The front of the MC3 is completed by probably the most important control: a largish level control that feels smooth and sturdy in operation. Finally the MC3 has select buttons for the two sets of audio monitors for easy mix checking.

Sounds Like...

A device like this stands and falls on its sonic and operational properties and I can report that the MC3 excels in both areas. Unlike the monitor controller I'm used to, (the active Mackie big Knob), it imparts no discernable changes to the audio passing through it. Monitor switching was silent and quick, while the Phase and Dim buttons do what they say on the tin.

It lacks some of the features of other monitor controllers, such as talkback and alternative stereo inputs, but if all you need is a portable system that will allow you to quickly check phase issues, drive your headphones with some high quality amplification, and allow you to switch between a couple of sets of monitors for mix checking without adding any colour of its own, the MC3 could be exactly what you've been looking for.

INFORMATION

£ GB£336.00 (inc.VAT)

Ⓐ Radial Engineering, 1588 Kebet Way, Port Coquitlam, British Columbia, Canada V3C 5M5
Ⓣ +1 (604) 942 1001
Ⓦ www.radialeng.com

Ⓐ UK Distributor: Shure Distribution
Ⓣ +44 (0) 1992 703058
Ⓦ www.shuredistribution.co.uk

THE REVIEWER

STEPHEN BENNETT has been involved in music production for over 25 years. Now based in Norwich he splits his time between writing books and articles on music technology, running his own Chaos studios and working in the Electroacoustic Studios in the School of Music at the University of East Anglia. He's also a filmmaker with several music videos and short films to his credit. www.stephenjamesbennett.co.uk

OLYMPUS

LS-20M

HD SOUND AND HD MOVIE

RECORD SUPERIOR TO CD QUALITY SOUND

SHOOT INCREDIBLE FULL HD MOVIES WITH MAGIC MOVIE EFFECTS

MOVIE IMAGE STABILISATION REDUCES CAMERA SHAKE

PCM (WAV) AND MP3 RECORDING / PLAYBACK FORMAT

LS IS MORE

WHAT MUSICIANS, JOURNALISTS AND PODCASTERS HAVE BEEN WAITING FOR

www.olympus.co.uk/consumer/LS-Series

It's a beast with real character, surmises SIMON TILLBROOK of the Fairchild 670-modelled compressor.

WAVES PUIGCHILD

Compressor

I have been a user of Waves plug-ins for many years, and continue to find them a part of all work that I am involved with.

Amongst my most used plug-ins are various emulations of vintage and personal modified hardware units, such as the Waves JJP Collection that includes examples of his Pultec EQs and customized Fairchild 670 compressor. Waves has always been able to capture much of the character of these desirable units with its extensive modelling approach during the development stages.

In front of me now is a Waves Puigchild Compressor: a 2U rack mounted hardware compressor that has been modelled on the Fairchild 670 belonging to Jack Joseph Puig.

Of course, there is a plug-in emulation in the Waves JJP collection of a Fairchild 670, so is this a hardware compressor based upon the plug-in emulation of a hardware compressor? Confused? Well, I am going to step away from this potentially unending discussion and simply look at the Waves Puigchild Compressor for what it is.

The Waves Puigchild Compressor is a hardware controlled fully modelled digital emulation of Jack Joseph Puig's stereo Fairchild 670. The original is a monster of a device, 6U and 65lbs incorporating 20 tubes and some 11 hand-wired transformers.

Internal processing is at a full 48-bits, with 24-bit converters handling the analogue input and output stages. Sampling rates up to 96kHz are selectable.

Control

Looking over the front panel of the Waves Puigchild Compressor we see the controls for the two channels symmetrically arranged with global controls centrally located below the two VU meters.

Looking at the global controls first of all, all functions are adjusted using notched rotary switches.

The first selects sample rate, and your options are 44.1, 48, 88.2, and 96kHz. Next we select our input source. There are three positions here, and they are analogue, SPDIF, and AES. If a digital input is selected, then the third function, Sync, selects between Internal clock, D, which uses your selected digital signal and EXT for external word clock.

We then come to a switch that selects between signal options to be displayed on the Waves Puigchild Compressor VU meters. Your options are input, output, and gain reduction.

Link Mode has three options available to you. Left/Right keeps the two channels of the Waves Puigchild Compressor independent. When in Linked mode, the left (or upper) channel also controls the Right (or lower) channel. ▸

THE REVIEWER

SIMON TILLBROOK is a UK-based recording engineer and mixer with an extensive freelance history both in the UK and in the US - much of that from the Nashville recording scene.

Trusted
Throughout the production chain, broadcasters rely on the purity and transparency of Genelec audio monitoring. Find out why Genelec is the broadcaster's monitor of choice at www.genelec.com
"To us, Genelec means total round-the-clock reliability"
Scott Holmgren, Molinare
"The default choice for studios across the world"
Daniel Jones, Vaudeville Post
"All of our rooms have Genelecs – it gives us 100% consistency"
Daniel Sassen, Envy Post
Find out more
Scan with a QR reader on your smartphone for full details of Genelec monitors
GENELEC®
www.genelec.com
SOURCE
UK distribution by Source • www.sourcedistribution.co.uk/genelec • T: 020 8962 5080

The Lateral/Vertical feeds the stereo input signal through a sum and difference matrix. Sum is fed to the Left (upper) channel, and Difference to the Right (lower channel). The channel input levels affect the signal after the matrix stage, this allows accurate level adjustment to maintain the relationship between the two signals. The signals then pass through the output level control before a second matrix that converts back to stereo.

The final global control of the Waves Puigchild Compressor selects between Off, 50Hz, and 60Hz where noise and hum characteristics of the original unit power supply can be introduced.

Each of the two channels of the Waves Puigchild Compressor has five rotary controls.

There are two input level controls, Trim and Gain. Input Trim controls the level of the analogue input signal from -6dB to +5dB in 1dB increments.

Input Gain adjusts the signal level going into the digital audio compression stage with a range from -20dB to 0dB, again in 1dB steps. Unity gain is represented at -14dB on the Input Gain control.

The range of the Threshold control is from 0 to 10, with a resolution of 0.1 incremented steps. This is not a linear scale as it is modelled on the original unit.

The Time Constants control has six numbered positions that each correspond to a fixed attack and release time (these are listed in the accompanying manual) and based on Fairchild originally published figures.

The final channel control of the Waves Puigchild Compressor is Output Gain and this has a range from -18dB to +18dB, in 0.1dB steps.

Connections

The Waves Puigchild Compressor has a full range of connections to satisfy users.

Analogue input for the two channels is accepted through balanced/unbalanced XLR/TRS combination sockets (each socket has a ground lift switch).

Output comes from either the balanced XLR or balanced/unbalanced TRS independent sockets.

Both Input and Output have level calibration controls that select between +9, 12, 15, 18, 20, and 24dBu to dial into your system. Full instructions to do this are once again found in the short, but comprehensive, manual.

Digital input and output are available though AES XLR, SPDIF RCA, or Optical connections, and sync/wordclock has the usual BNC connector with a termination on/off switch.

Use

The Waves Puigchild Compressor is quite a beast. This is a unit built to withstand heavy use and transportation and, in a sound reinforcement capacity, the Waves Puigchild Compressor makes a lot of sense.

I can see live engineers and maybe mobile outside broadcast users being attracted to a hardware unit like this.

Incorporating the Waves Puigchild Compressor into your system is very easy, with a great range of connectivity and level calibration control to ideally match your requirements.

I used the Waves Puigchild Compressor in both analogue and digital set-up scenarios. The 24-bit converters are every bit as good as you would want, and cope with a wide range of high intensity signals with no audible issues arising.

I have been lucky enough to use a few Fairchild compressors, and I must say that the Waves Puigchild Compressor delivers an extremely convincing sonic result. Blindly listening, many would be convinced that this was not only analogue, but had valve processing.

It is as a main output processor that I found myself using the Waves Puigchild Compressor primarily. It is a device that adds a unique character to your overall product in a way that nothing else really can.

Such character splits opinion, but this seems to be a recurring theme with the Waves Puigchild Compressor.

This is very tactile device. The rotary controls have a great feel to them, and I know that many people enjoy that physical connection with such a device.

Conclusion

The Waves Puigchild Compressor is a fabulous example of modelling another device to a very high level of detail, delivering fabulous sonic results.

I find myself coming back to that plug-in/hardware point earlier. I can understand people wondering why would they pay nearly £3,000 for a hardware emulation when they can get the plug-in version with great results for under a £1,000.

This is a device I can see being attractive to live engineers and those who enjoy that direct interaction with their studio environment, and can afford to do so.

The Waves Puigchild Compressor is a great product; you will have to come to your own conclusion over the hardware/plug-in argument. AM

INFORMATION

£ GB£3,149.00 (inc.VAT)
Ⓦ Waves Inc.
Ⓦ www.waves.com

Ⓐ UK Distributor: Sonic Distribution
Ⓣ +44 (0) 845 500 2500
Ⓦ www.sonic-distribution.com

ACTION.
MKH 8060 Short Gun Microphone.
Capturing the Moment.
Whether it's a feature film, documentary or ENG, the new MKH 8060 gives you sound quality that matches your exciting pictures.
Whether you're in the studio or on location, its excellent directivity and improved off-axis linearity ensure a clear and natural sound recording, whilst its RF circuitry means that it's virtually immune to damp and condensation.
Part of the flexible MKH 8000 series, just add the MZD 8000 and you have a digital mic.
www.sennheiser.co.uk
SENNHEISER

FINAL CUT
Special

Objective Audio
Developments In The Mix

PAUL MAC explores a few of the new object audio formats and what impact they might have in the theatre.

Last month in the leader I hinted at developments in object-based audio deliverables – objective audio. As a concept, especially for film, it makes sense to package objective audio with '3D Sound', but the two are not the same. The first facilitates the second. The most obvious initial applications are in film – especially 3D – though the ideas are equally applicable in music and elsewhere, especially when it comes to the first big prize… Say goodbye to the channel.

At the moment, if you want to deliver a 5.1 mix, you have to deliver six channels of audio, all the same length. If you wanted to deliver the same mix in 7.1, you'd have to re-supply it as eight channels of audio. The reason for this is that the process of panning onto a finite number of channels permanently prints that panning – it's inherent in the delivered tracks.

Now imagine that you supplied a number of channels (the actual number of channels is irrelevant) together with positional information about each one. Pre-pan audio, if you like, with three-dimensional panning information based on, say, a co-ordinate or vector system. Now, no matter what the playback system, your delivery will always be compatible – the system would just need to know how that spatial metadata translates to its own layout. Very cool.

And we can add another layer of cool… 3D. Systems interpret spatial information for individual objects at the point of delivery, even including processing to adapt to perceptual boundaries of the space, and more. The reason ordinary channel-based sound doesn't follow the 3D picture is that everything is still panned across the same channels, with the same processing, and the same acoustics to deal with. What if an object could be individually processed according to the spatial metadata at the point of delivery? SRS Labs, which is pioneering the MDA system for example, specialises in 'spatial rendering'. Todd Baker, Director of Technology at SRS Labs says: "When we have the individual objects themselves we can do so much more with it. We can create virtual height. We can create sounds that exist in the room away from the speakers. We can't do that when we're stuck in a channel based environment, because if we want to, say, put a bird on your shoulder and that bird is married into the existing sound track, we have to worry about how we affect the timbre of the rest of the mix with this processing; whereas if we have the object of the bird by itself we can put bird more effectively on your shoulder."

So, imagine forgetting about even the pre-pan channel as an entity. What about considering the object – the footstep, the door slam, the bullet-by, the high-hat… it works with anything. Package the spatial information with the object and you begin to sense something very special happening.

There are several new entries vying for attention in the objective audio field. IMM Sound's immersive audio system has already been working in the renowned Spanish facility Sonoblok, and it has announced the first major release to use IMM Sound: The Impossible, starring Ewan McGregor and Naomi Watts; SRS Labs, a company that has specialised in spatial processing and come up with MDA; Dolby has played its hand with 'Atmos', which has movies in production at the moment; and Iosono, based around the Nuendo platform, has been around for a little while (at the time of writing, information was not available, but we will be following up).

IMM Sound

The IMM Sound immersive audio workflow starts in the mix room with the 'IAW', a separate workstation currently integrated with Pro Tools. Any track that you want to become an object simply needs an instantiation of the IAW plug-in, which then communicates with the IAW, sending metadata about the audio it is receiving. In this way those sounds on the tracks can be separated into objects for the IAW to operate on. Objects can be individual object sounds, such as a helicopter, or they can be atmospheric sounds, delivered to the IAW as

▸

multi-channel stems, if you wish, or directly input from microphone arrays such as the Soundfield or a double M/S arrangement.

The IAW has a wide toolset that starts with a three-dimensional panning – or spatialisation' tool. This displays named, individual objects, and how they are moving in the 3D space. So, you might have several people moving around in a scene, with a telephone ring, and some dialogue. All the elements are displayed simultaneously on screen and the IAW engages some neat screen acrobatics to help move objects in three dimensions – including an impressive-looking iPad app.

Pau Arumí, Technology Manager at IMM Sound expands on the idea of bringing stems in and adapting them to the objective world. "You can do more interesting things with this. For example the IAW has up-mix algorithms. So maybe the engineers could decide to play with the parameters of these channels and perform an up-mix of this 5.1 stem, which will sound more immersive. In effect, the channels of the stem themselves become objects in the IMM Sound world."

The IAW also both renders the IMM Master Format file and, if you want them, discrete channel versions (5.1, 7.1 etc). Arumí points out that rendering to, say, 5.1 from the IMM Master Format should be better for it: "When you do this transformation of 3D to 5.1 or 3D to 7.1 the good news this is that it's automatic – you don't lose a single minute doing it – though of course the operator can adjust it.

"The mix sounds incredible because you're not actually down-mixing. Decisions on how to put this sound into 5.1 can be taken very smartly – very cleverly. So you can have very nice panning in 5.1 and 7.1 that would have been very difficult to achieve manually. Imagine panning from any direction to another direction and do that conserving constant energy. This is very hard to do with standard panning techniques… with us 5.1 is for free!"

"The mix sounds incredible because you're not actually down-mixing. Decisions on how to put this sound into 5.1 can be taken very smartly – very cleverly. So you can have very nice panning in 5.1 and 7.1 that would have been very difficult to achieve manually"

Unlike the other two mentioned in this article, the IMM Sound objective audio format is not initially intended as a streaming format, though that development is "On the road map..."

"We do not limit the number of sound sources that the IAW can deal with," says Arumí. "Actually we have been doing successful tests with mixing and recording more than 300 individual sounds, but we have not even pushed the limit... Another thing is that in the whole process we don't use lossy compression – all the storage is done with lossless compression at standard cinema rates."

And integration into a standard dubbing theatre can easily include the main console. In a more standard arrangement, as long as there is a straight path from Pro Tools to the IAW, it doesn't matter what it passes through. The console can be processing individual channels pre-IAW and passing them on – the metadata from Pro Tools to IAW is still valid.

On the other hand an operator could explore the possibility of mixing a number of channels on the console into a multi-channel stem and then passing that to the IAW to be treated as a stem.

Delivery is in-venue is via the IMM 3D Sound Processor, which can also up-mix from discrete multichannel formats (a bonus).

SRS Labs MDA

SRS Labs' MDA (Multi-Dimensional Audio) is another wholly object-based system that derives its objects from allocated tracks in the DAW. In this case, there is no additional workstation mentioned, like the IAW, just the MDA Creator plug-in, which when instantiated contributes that track to the MDA stream.

When it was announced in March this year, SRS announced that MDA Creator works on both Mac and PC for RTAS, AU and VST. That was part of a statement primarily used to announce that the MDA Platform Specification 1.0 had been completed and was available to members of the 3D Audio Alliance (3DAA). Unfortunately, the specification is still only currently available to 3DAA members, which, at the time of writing, were listed as SRS and AMD.

I did talk to Todd Baker from SRS about the MDA platform and he stressed its readiness for streaming – the data stream delivers both the spatialisation metadata and the audio objects as they are needed. An amount of caching is built into the specification so that bit-rates can be intelligently managed. Asked about the limits of the platform with regard to the streaming and specifically about the potential limits placed on the Re-Recording Mixer, Baker notes that enough headroom and provision had been built in: "As audio objects are needed, only then are they present in the stream. If the system isn't using those audio objects at that time, they will be eliminated from the queue, thus freeing up bandwidth. Transmission bandwidth limitations would limit the number of objects that could occur at any given time, but a mixer would have to mix together an incredibly large amount of objects at one time for this to pose an issue and, of course, this kind of threat is easily overcome by implementing a bit rate throttling system or a compression codec."

The details of the streaming format, when I spoke to SRS, was nearing completion. "The idea is for it to be able to be packaged with MPEG-TS or MPEG-4," says Baker. "And the idea is that it can be packaged independently of any codec in terms of data reduction.

"It can be packaged as a bit-stream with the video format, or you could implement codec compression on the individual objects as needed."

Clearly MDA is not just for cinema – SRS has seems to have its eyes on broadcast, and other devices. "We have players built for Mac and PC at this point. We are working on mobile versions as well. We anticipate that we'll probably see some sort of cloud rendering for mobile devices. There is space within the specification for device query or device information, so the cloud rendering could actually adapt." That is, when you get to listen to MDA on a mobile device, the streaming service might check to see what kind of device you have and render the best-fit deliverable while you listen. Clever stuff.

SRS envisages implementation of MDA into the mix stage as straightforward as engaging the plug-in on the right tracks. Object selection will obviously be down to the mixer, so special effects can be given special attention, while atmospheres, dialogues, music, and so on can be treated at a higher stem level. "It's highly likely that the objects will be treated at the stem level," says Baker. "Footsteps are a good example. If I have six characters on screen and they are all walking down the street together and they don't separate in the scene, there's no reason that I would need to separate those objects in the mix. I would simply place them on stage as a single object and move them accordingly."

> "We are working on mobile versions as well. We anticipate that we'll probably see some sort of cloud rendering for mobile devices"

VST, RTAS, and AU plug-ins are in beta at SRS and Baker expects them to be available later this year. "Those plug-ins can get instantiated on any one track or buss inside a DAW and applied as the panner would normally be applied; so it's very simple to integrate into the existing workflow."

There is less to go on with MDA at the moment, as the elements are still being finalised, but now the company has DTS as its owner there may well be additional focus on bringing MDA to fruition.

Objection!

The more you sit and think about the implications of objective audio mixing and distribution, and the possibility of casualties along the way (anybody who invests in one system or another is taking a risk on future up-take), the more you wonder how much a common raw object audio file or file package would benefit us right now. An off-line package of object-based spatial and volume data, plus the audio objects themselves, that can be rendered however you want is something that the DAW manufacturers should be considering – if they haven't already started. Indeed, there may be interested parties from the parallel world of gaming, where the object model is already well advanced, mainly because game development environment is object-based anyway. Middleware developers such as FMOD and Wwise might see potential in a market currently stuck in a channel model that is difficult to get out of without ground-up re-thinking of the tools. The new version of FMOD already plays nicely with the SSL Nucleus and several plug-in manufactures are supported, so the channels of communication are open. On the other hand, the main DAW developers will realise that they have the raw materials of an object package in their own session file formats. By ignoring tracks and describing only regions, you're 90 percent there already. Partnerships with the format owners might yield slicker future solutions to producing objective mixes. Issues of effect rendering would have to be addressed… Do we eventually want metadata to describe everything other than the raw audio events? Surely that's true object-based content? It's also a way off yet… Or is it?

We might be on the edge of a real revolution in audio mixing and distribution – a deep, unexplored, but exciting abyss. All those with a stake in this industry are deciding right now whether to take the stairs, or the bungee.

DOLBY ATMOS

Dolby Atmos is unique amongst the three object-based options detailed here in that it is based on a 'beds + objects' model. That is, a normal multi-channel component plus provision for selected, localised objects. However, given that objects in MDA and in IMM Sound can also be multi-channel 'beds' the distinction may be immaterial. What this concept does do is explicitly give that foundation of the 'normal' surround mix – a familiar place to start. Maybe the process of creating a bed and then selecting objects for special events is a methodology would appeal?

To clarify, Nick Watson, Senior Cinema Technical Marketing Manager at Dolby was able to answer a few questions:

Paul Mac: What constitutes an 'object' in Atmos and how are those selected or defined at the mix stage?
Nick Watson: An object is a sound event (or combination of simultaneous events) that share the same point in space and would benefit from being placed at a given point in the auditorium, whether it be on the screen plane or around the room. The sound designer or editor can identify suitable objects during premixing, and can these comprise of any of the major categories of sound elements (dialogue, music or effects).

PM: What additional tool safe required to create an Atmos mix and how do these fit into current production infrastructures/workflows?
NW: Software is required for digital audio workstations and film mixing consoles to be able to capture the positional information of sound objects, which can then be used by the rendering unit to place these objects appropriately in the dubbing theatre. The rendering unit will also take channel-based content, created using existing workflows, which will be combined with the objects to create the complete Dolby Atmos mix.

PM: So, Atmos is a part object, part discrete channels system – what are the channel limits and how will repurposing / down mix be handled at delivery?
NW: Channel-based content is referred to as 'beds' within Dolby Atmos, and the system will currently accept a bed of up to 9.1 channels (i.e., 7.1 plus two overhead arrays) to be rendered in conjunction with the objects. The system will render to the speakers that are available in the auditorium, as applicable under the control of the original sound mixer who can 'audition' rendering to different channel configurations during the mix and printmaster processes.

PM: Is Atmos intended initially as a streaming or non-streaming format? If streaming, how do bit rate limits affect object and channel 'polyphony' in the mix? Are there any limits imposed, for example, on the re-recording mixer.
NW: Dolby Atmos is intended to be a streaming format, with the content being streamed from the Digital Cinema Package to the Cinema Processor for real-time rendering. The limits put on the Re-Recording Mixer are up to 128 channels of audio, which can, for example, be translated as a 9.1 bed and up to 118 simultaneous audio objects.

INFORMATION

www.immsound.com
www.dolby.com/atmos
www.iosono-sound.com
www.srslabs.com/mda

Immersive Audio Workstation (IAW)

The IAW allows the engineer to manage a complex 3D space by easily moving objects in a 2D surface.

It allows easy and intuitive modification of sound 3D position and properties, like size, divergence, proximity and others.

www.immsound.com | info@immsound.com

The DFC Gemini is property of AMS Neve Ltd. iMac and iPad are property of Apple Inc.
imm sound is not affiliated with Apple Inc. or AMS Neve Ltd. in any way.
For more info on DFC Gemini please visit www.ams-neve.com. For more info on iMac and iPad please visit www.apple.com

immsound

It's **imm**ersive, it's **imm**pressive, it's **imm sound**®

Focal SM9

The Focal SM9 is already making waves in studios around Europe. NIGEL PALMER finds out what the fuss is all about...

French loudspeaker manufacturer Focal has a long history of products for both the hi-fi and professional markets, but lately there's been a particular buzz about the SM9 active studio monitor. With all-new components and a 40-month development process, it has the unusual ability to function both as a full range three-way and a bandwidth-limited two-way speaker. Now it's available, I naturally wanted to find out for myself what all the fuss was about…

Overview

The first thing that struck me when the review pair arrived at Lowland Masters was that these babies are heavy. At 35kg each, they're weightier than their 320 x 490 x 390mm (HWD) dimensions would suggest, though with 600w of amplification on board (400w for low frequencies and 100w each for mid and high) plus power supplies, transducers, and a hefty cabinet this is perhaps unsurprising. The cabinet boasts four drivers: an inverted dome tweeter, 16.5 and 20cm mid and low drivers and a 27cm (11-inch) passive radiator. This last has some correspondence with a conventional ported reflex design but avoids port noise or 'chuffing', and in this case also contributes to the lower end of an impressive 30Hz to 40kHz frequency response.

The SM9 has an understated and smart appearance, a 'watermarked' pattern on the upper surface lending visual appeal, no bad thing in a world with so many black boxes. There's a tri-colour LED on the front panel, green in normal use but capable of displaying other statuses; to the side at the tweeter end is a panel with an LED mirroring that on the front, together with three switches, Standby/On, Focus, and Direct Input. Focus switches the system over to two-way mode, bypassing the two LF drivers and reconfiguring the crossover so that the mid driver handles all the lower frequencies. Frequency response then becomes 90Hz-20kHz: note that the tweeter's highest frequency is reduced by an octave, presumably for a more realistic voicing similar to that of a dedicated smaller loudspeaker.

The back panel is mostly taken up with a large finned heatsink for the amplifiers, and in addition to a mains inlet and XLR input with both 'semi-pro' and 'pro' sensitivities are EQ controls to help match the speaker to different rooms, bypassed with the Direct Input switch on the ▸

THE REVIEWER

NIGEL PALMER has been a freelance Sound Engineer and Producer for over 20 years. He run his CD mastering business, Lowland Masters (www.lowlandmasters.com) from rural Essex where he lives with his family and two dogs.

side. The EQ must be one the most comprehensive I've seen on a loudspeaker, with high and low shelves and three midrange adjustments, all plus or minus 3dB in 0.5dB steps, together with a high-pass filter.

In Use

I set the SM9s up in my room on stands in place of place of my usual monitors, and gave them a good workout. My immediate impression was that in Direct Input the speakers were brighter and more forward than I usually like, although they were also very revealing on all the material, both reference tracks and mastering work in progress, that I tried. The HF shelving adjustment came to my rescue here, and I found it both smooth and usable. With the treble tweaked, the mid frequencies came into line so no need for adjustment there, though the mid controls clearly work as intended. I then noticed that the extreme lows, although reaching further down than one might expect from the box size, were now a little too full for my taste (electronic dance music people will no doubt disagree) and the high-pass filter came into its own here – I took one click back from Full Range to the 45 (Hz) setting, and the low end was then suitably controlled both for my room and taste. I found later that I could go back to Full Range if I moved the speakers about 25cm further away from the back wall, but the exercise proved to me how flexible this speaker system is, boding well for those who take their own monitors to different studios in the course of work.

I found the Focus two-way mode appealing, it has a band-limited rightness to it that could be invaluable in mixing, enabling the user to zone in on elements such as vocal level and the vital mid-range balance. The lack of 'real' bass certainly sharply pointed up what many mix people who only use small two-ways are hearing, and why a significant amount of material comes to mastering requiring LF adjustment – at least in three-way mode you can hear what's really going on in the lows.

> "I found the Focus two-way mode appealing, it has a band-limited rightness to it that could be invaluable in mixing, enabling the user to zone in on elements such as vocal level and the vital mid-range balance."

I do think the manufacturer has missed a trick in not providing a remote control for Focus mode: Focal's expectation appears to be that the user will stay in one or other mode for long periods, but in my mixing days I would regularly flick backwards and forwards between the main monitors and near-fields and I don't think I'm the only one. As the SM9s could be 2m or more away, regularly jumping out of one's chair and pressing both Focus buttons while on a long mix isn't the easiest prospect, but perhaps I'm just being a 'more' consumerist and not appreciating this nifty and unusual feature for what it is – time will tell.

Conclusion

The Focal SM9 is a fine recording and mixing monitor, and the Focus mode makes it even more useful in that context. It is certainly a bold and effective departure in mid-field monitoring, and I don't think it'll be long before the SM9 becomes a common sight in audio workplaces.

INFORMATION

£ GB£4,190.00 (exc.VAT) per pair

Ⓐ Focal Professional, BP 50401-108, Rue de l'Avenir, 42353 La Talaudiere Cedex, France
Ⓦ www.focalprofessional.com

Ⓐ UK Distribution: SCV Electtronics
Ⓣ +44 (0) 208 418 1470
Ⓦ www.scvlondon.co.uk

SOURCE POINTS

Nicolas Debard is the Focal Professional Product Manager and the man who has been responsible for spreading the word on the new SM9s. They've been a long time in development, but now they're available, and shipping. Audio Media stopped Nicolas at a recent exhibition to ask about his take on this new monitor...

***Audio Media:** What are the main selling points of the SM9?*

Nicolas Debard: "The key fact is that we have produced a very compact, near-field and mid-field solution. It's a three-way design, able to reach very low frequencies – 30Hz – and it goes up to 40kHz. You get all the details and information in the very low end and the same goes for the far top end. It is really easy to achieve a great mix by precisely adjusting reverb tails, for example, thanks to the tweeter performance. 40kHz means that this tweeter can reproduce even the slightest details between 10kHz and 20kHz.

"Another thing is that we designed very high efficiency, highly dynamic amplification based on a class AB design, so the dynamic range is really huge. Combining this with the performance of the eight-inch drivers – very tight bass and low end frequency response – means you can control everything, adjust really precisely, for example, compression ratio.

"Also, the mid-range is impressive damping wise. This is one of the reasons for the natural and neutral sound of the SM9. So if you want to precisely control voices – EQ voices and so on – and avoid the masking effect, you usually have between the low frequencies and low mid, this is a good solution.

"Another key point is that we came out with a new Focal-patented technology called Focus. What is Focus? It is two monitors in one box. You have two cabinets inside.

"Usually you need at least two pairs of monitors in order to A-B your mix. The problem is that you only have one suitable location for the monitors. So if you need more than one pair you will need to compromise monitor positions. That's the reason why the SM9 Focus technology is interesting... You can A-B your mix without changing the stereo image positioning and without changing the tonal balance as well. When you go from one pair to another pair of speakers you will change the tonal balance drastically – which monitor should you trust? Where is the truth? You never know.

"By activating the focus button on the side of the SM9 you will deactivate the sub and passive radiator and you will change the cut-off frequency of the mid. The mid will start at 90Hz and the tweeter will stop at 20kHz. It's a very interesting solution for A-B'ing your mix and checking mix quality on bass-challenged systems."

Antelope Audio Eclipse 384

STEPHEN BENNETT decides this is one beast he'd like to keep in its cage – he's not letting it go…

When you're working in an ultra-critical listening situation, such as a mastering studio or high-end mixing facility, you're likely to want to use specialised high quality dedicated analogue and digital converters when making crucial artistic decisions. Working in this way allows you to run the software and interface of your choice, but to specify the part of the system that moves the audio to and from the digital domain to provide the best conversion possible. Of course what constitutes 'best' in this context could fill a book, but it's unarguable that equipment that pays attention to digital clocking, power supplies, and high quality components will always outperform inexpensive off the shelf converters and PSUs – and if you're going for the best, you'll be looking at a device like the one under review here, the Antelope Eclipse 384.

In The Box

Unlike many of the specialised equipment in this area, the Eclipse 384 is rather more than just a digital converter. It also sports a flexible monitor section, USB audio interface, sophisticated headphone amplification, and a central clocking system alongside its digital duties. It's a weighty 8Kg 2-unit high 19-inch rack unit with an elegant front panel dominated by a large OLED display that shows the state of the various system parameters, alongside a 32 segment bar graph monitor that can display the levels of any of the device's inputs and outputs. There's a stepped main monitor level control that makes it easy to reproduce exact settings – an essential feature in a mastering environment where volume level consistency is paramount. Under this control are the Mute and Mono buttons, and a Dim control that lowers the output level with a preset attenuation.

Two wide impedance range headphone jacks lie under the headphone level control – the output of which handled all of the phones I threw at it whatever the impedance, and always provided enough gain. Five preset buttons, which allow you to save favourite settings and the initially mysterious 'Antelope' button completes the front panel controls.

The overall feel of the Eclipse 384 is one of quality – the buttons feel secure and respond with an internal click when activated, and the rotary controls are reproducible and sturdy in action.

Compared to the stylish and uncluttered front panel, the rear is packed to the brim with connectors. Power is via a standard IEC mains plug and sits alongside connections for word clock outputs on BNC connectors, quarter-inch TRS footswitch connector, AES/EBU, S/PDIF and Toslink 'de-jittered outputs, along with the complementary digital inputs. Two AES/EBU outputs provide a signal from the D/A converter and are used in tandem when the unit is clocked at 384kHz – its maximum sample rate. Balanced analogue inputs on XLR and TRS connectors are provided along with two quarter-inch TRS insert points that allow you to patch in a processor just before the A/D conversion. There are three stereo pairs of balanced monitor outputs along with a balanced output for a sub woofer. A quarter-inch jack provides an input for a talkback microphone, while CUE HP outputs for cue mix listening are provided on balanced stereo quarter-inch sockets. A USB 2 socket provides an interface to a computer, and finally there's also a facility for the device to accept an Atomic clock input (such as the Antelope 10M) – which has to be the sexiest clocking system so far developed!

Antelope Technology

The Eclipse 384, as its name suggests, features A/D and D/A converters with a maximum sample rate of 384 kHz clocked by two independent 64-bit DSP 'Trinity-level clocks', and the dynamic range of conversion is better than 120dB. An oven controlled oscillator means that stability won't be affected by temperature fluctuations, as the circuitry will always be sitting above, and thus unaffected by, changes in ambient temperature.

What this means in practice is that you have a high stability and accurate clocking system that supports digital conversion with a wide dynamic range – which is exactly what you want when converting those digital bits into to listenable audio and vice versa.

There are separate power supplies on separate circuit boards for the analogue and digital sections of the Eclipse 384, which Antelope claims 'virtually eliminate digital crosstalk.'

More Than Just An Ungulate

As intimated earlier, the Eclipse 384 however goes further than just digital conversion. It also acts as a high quality stereo USB interface for your computer and features a flexible monitoring system – which is a pretty unusual addition, as most high-end converters of this type assume you'll be using a desk and/or other interfaces or monitor controller for these purposes. The supplied Eclipse 384 software allows to you select and name inputs and outputs, clocking options and sample rates and conversion.

THE REVIEWER

STEPHEN BENNETT has been involved in music production for over 25 years. Now based in Norwich he splits his time between writing books and articles on music technology, running his own Chaos studios and working in the Electroacoustic Studios in the School of Music at the University of East Anglia. He's also a filmmaker with several music videos and short films to his credit. www.stephenjamesbennett.co.uk

A/D and D/A conversion is also set up from the software. It runs under OS X or Windows and is really easy to use –a simple download from the Antelope site and I was up and running in no time.

Once set through the Software Control Panel and stored in the five presets, the user always can recall the favourite setting using only the front panel of the device. The aforementioned Antelope button activates a menu system that is then navigated using the '1' and '2' preset buttons, and which allows you to set meter display, inputs and outputs, sample rates, and clock set-ups. Again it's a simple system that's intuitive and easy to use.

The preset buttons also have a dual function – they can be used to adjust various system wide parameters such as calibration, USB modes, a system reset, and device information. Speaking of the USB connection, the Eclipse 384 sports a custom USB chip allowing the unit to stream data at 480Mbs – which is how it's able to handle sample rates up to 384KHz using the humble USB socket.

Monitoring

The software control really comes into its own when you are setting up the monitoring and cue mix section of the Eclipse 384. Connected audio monitors can be named and have their output levels preset to match levels when switching to compare mixes. You can choose between balanced and unbalanced signals, and between 'consumer' and professional' signal levels – and the unit also has useful programmable oscillator that can be used for gain matching duties. Signals can be monitored in mono or with phase inversion tapped in and cue mixes can be sent to the rear panel outputs – you can also route the talkback mic and oscillator to the cue mix just like on a proper console. The talkback mic's status can be controlled using the aforementioned

footswitch input and you can choose whether monitor or cue mix signals are sent to the front panel headphone outputs.

The Preferences section of the software allows you to set Dim levels, sub woofer crossover frequencies, dual clock mode, LED brightness, and the footswitch functions.

Out On The Veldt

I dropped the Eclipse 384 into the studio in place of my usual RME Fireface and Metric Halo ULN-2 interfaces, and auditioned various mixes through a pair of ATC SCM 50 and PMC TB-2 monitors. I usually work at 44.1kHz, but for the purpose of this review decided to compare the units at several different sample rates. Even in my reasonably treated studio, the Antelope was audibly superior to the RME – though using it as first a clock and then as a D/A converter improved things no end.

The comparison with Metric Halo box was less clear-cut. In some ways the ULN-2 is similar in functional concept to the Eclipse, but has two high-quality microphone pre-amplifiers in place of the Antelope box's higher sample rate, and superior clocking and digital conversion facilities. After several listening sessions I felt that the Eclipse 384 just had the edge – especially at the higher sample rates, and I'd be happy to use the unit as the centrepiece of my mastering studio.

Conclusion

There's a lot to like in this box – you could easily spend more on a separate similar quality D/A and A/D converter, master clock, and a monitor controller – which, incidentally, doesn't add or subtract from the audio passing through it, unlike some I've used in the past. Having all these various facilities in a single, easy to use, box with reproducible settings is a tempting package and I can see a lot of mastering engineers especially being drawn to the Eclipse 384 – especially as you can also throw in your favourite mastering processors via the insert points.

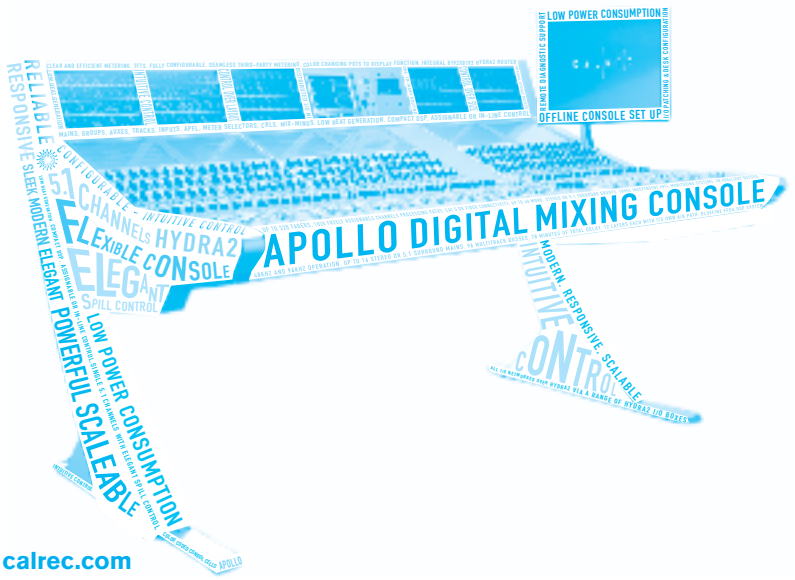
Conversion doesn't get much more stable and accurate – and the added advantage of having the audio interface and monitor section means that it's going to be more useful in more situations than most stand alone converters. This is one beast you aren't going to want to set free once you have it in captivity.

INFORMATION

£ GB£5,995.00 (inc.VAT)

Ⓐ Antelope Audio
Ⓣ +44 (0) 208 133 8355
Ⓦ www.antelopeaudio.com

APOLLO, FROM CALREC.
FORM AND FUNCTION, SEAMLESSLY MATCHED.



calrec.com

CALREC
Putting Sound in the Picture

Today's broadcasters need more and more audio channels at ever-higher resolutions, more power to handle this increased channel count and more ergonomic control surfaces to manipulate them.

Naturally, Calrec has the answer.

With the same levels of reliability for which Calrec are world-renowned and a remarkably intuitive control surface which still manages to add enormous flexibility, Apollo is nothing short of revolutionary. Able to operate at multiple sample rates, Calrec's Bluefin2 DSP engine equips Apollo with more than 1000 channels for 5.1 Surround production and its internal 8192² Hydra2 router turns the console into a powerful networking tool.

The world's most successful broadcasters rely on Calrec consoles.

Apollo is the first of Calrec's new generation.

APOLLO

The Royal Shakespeare Company

The Royal Shakespeare Company's 50th birthday celebrations have included the opening of a completely transformed theatre complex. JO FLETCHER-CROSS talks to Head of Sound Jeremy Dunn about the new buildings, and how it feels to work on Shakespeare again, and again, and again...

The Royal Shakespeare Company has just celebrated its 50th birthday. Not content with just a birthday cake with lots of candles, the company has spent several years transforming its home at Stratford-upon-Avon.

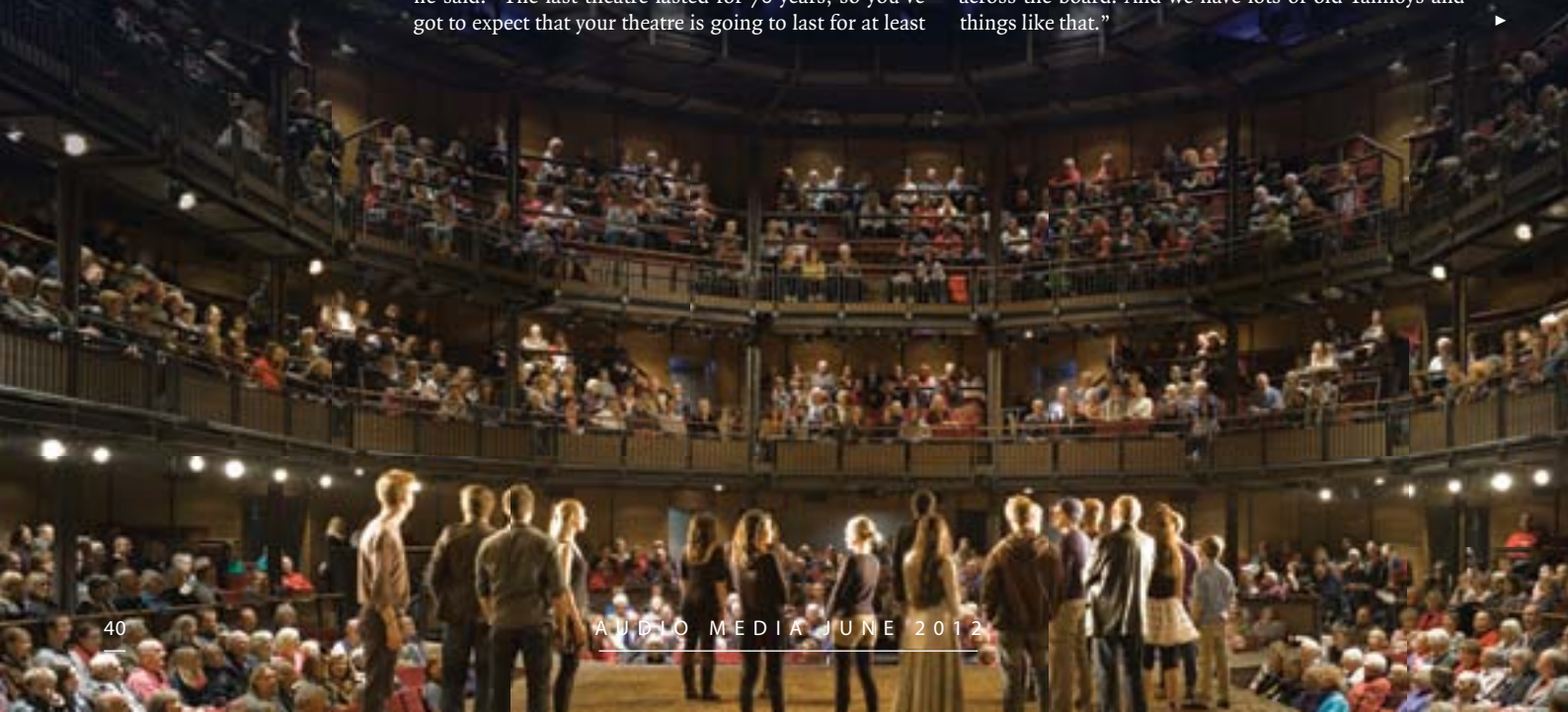
The actual buildings date back to 1932 – the New Shakespeare Memorial Theatre, as it was known then, was designed by Elisabeth Scott and was one of the first important buildings in the UK designed by a woman. The Royal Shakespeare Theatre and the Swan Theatre closed in 2007 for construction work to begin, and the RSC used the temporary Courtyard Theatre – a 1,000-seat theatre constructed on the car park of the RSC's Other Place theatre, as well as performing in other venues, including the Roundhouse in London.

It has been a long and complex operation – plans were first begun for the redevelopment of the site in 1996, when the RSC still had its London base at the Barbican Theatre, an arrangement that lasted until 2001. Despite the upheaval of the transformation period, the RSC has thrived in the last decade or so, particularly since the appointment of Michael Boyd as Artistic Director in 2003, who has overseen the 2006 Complete Works Festival and successful London seasons at the Novello Theatre and at the Roundhouse. Boyd is shortly to depart the post, to be succeeded by the RSC's Chief Associate Director Gregory Doran in September 2012. So it's rather an exciting time for the company, although the calm, unruffled Head of Sound, Jeremy Dunn, makes it all seem rather easy – perhaps because he has had to think so much about the long term implications of the new building.

Dunn has been with the RSC for "about 20 years", including 10 years at the Barbican. Those working on the transformation wanted to consider how the building would run well into the future, explaining, "We were very keen that we had a strong infrastructure in place, because as soon as you've designed it – and we started designing it in about 2004, and we didn't open till 2010 – it's already going to be out of date." They did not want to be left behind by fast-changing technology. "Even the things we designed in 2008 or so, with Cat5 cables, it's now Cat 6. Immediately everything changes, so the idea was to create an infrastructure that could be expanded," he said. "The last theatre lasted for 70 years, so you've got to expect that your theatre is going to last for at least 70 years; and I know that Cat5 is going to be Cat27 by that point, or something else. So the idea was to have holes around the theatre, and what we call temporary cable routes, so that no matter what the new infrastructure was, we could then augment that around the theatre, and get from the two theatres, and also the support that runs between those theatres like editing, and dubbing, and recording, and music – we could get to all those spaces. The containment is only 50% full." It was not a massive surprise when Dunn told me his background was in electrical engineering. "We have a four-section containment just for audio, then there's the lighting and then the infrastructure for domestic stuff in the building as well." All of this should make retrofitting a bit of a doddle. "Absolutely, because it's all about getting through brick walls, it's the most difficult thing to do," said Dunn.

Working On Top And Around

Once the infrastructure was in place, the team then worked on top of that, looking at equipment and fitting up the space with what was needed. I asked about the PA system in the new building. "We were already pretty much a Meyer house. We bought an awful lot more Meyer, and most of that is the Melodie line array that we have in the RST. We have a central cluster. It's now a three-sided theatre, so it's almost three auditoriums in one house, and we do that with three line arrays, pretending to be a single point source. And then in the Swan, we do that with a cluster of UPJ-1P Compact VariOs, and then we delay with mostly d&b Eos running on their D6 amplifiers. We do surround sound in the Swan with JBL Control 1s. We do have various speakers across the board. And we have lots of old Tannoys and things like that." ▸



When it came to choosing desks, the touring element of the RSC's work was a key factor. The company has a strong relationship with DiGiCo, as Dunn explained: "Our claim to fame is that we had the SD5T with 001 written on the back. We had that one and then we subsequently bought another one for our Swan Theatre." When the D5T was 12 years old it was replaced with an SD7. "Then we wanted to transfer shows that were on the SD7 to go on tour. One of the venues was Theatre Royal Bath, which is one of the smallest number one venues in the UK, and it just wouldn't take an SD7. So we looked around at various things."

A DiGiCo solution soon presented itself. "We realised we could do the show on an SD9. It's fantastic to use because we've literally got a MacBook Pro running Qlab, with what they call a Madiface MADI port on it. In theory we've got 64 channels of sound effects, though there's only 40 channels on the desk." The reduced footprint was, then, a prime consideration, but also the ease of use and familiarity. "The first time the guys programmed the SD9 was in Newcastle for the first date of the tour, so that isn't bad going because normally you just wouldn't do that because it's new software. They're so familiar with the procedures."

Taking It On Tour

The RSC does a lot of touring, and of course the SD9 goes out on tour now. The playback and desk is provided by the RSC, with speaker stock hired in. "To be honest, though, an awful lot of theatres around the country these days, apart from surround sound, their main PA is actually quite good. Especially places like the Theatre Royal in Newcastle, who have an absolutely gorgeous d&b rig, so there's no point in taking that down and putting our rig up. All we added up there was a bit of surround sound and a bit on stage which we hire, and it's absolutely fine." Which is a bonus for the RSC – and other touring companies – as it saves money, not just in hiring stock, but in manpower and time. Generally the RSC sends a technician out on tour – the current tour of *The Taming Of The Shrew* has two people who work in the department, one full-time and one part-time, out on the road. For the Roundhouse season, London-based technicians are hired, contracted to the RSC. Freelance production engineers come on board to help out with fitting up the London shows both at the Roundhouse and later on at the Noel Coward theatre in the West End.

The RSC presents hundreds of performances every year, in Stratford, London, and around the UK. There is a lot for the sound department to do, and it has to be sensitive to the particular needs of the company. "I never consider myself a sound designer, so much," said Dunn, "I consider myself someone who provides sound that the director has either requested by saying, 'can I have an owl hoot here', or something, or inferred by the way he's directing a show. Some people suggest that is sound design. What I would call sound design is when you pick up the mood of a rehearsal room and conversations with the director, and by the scripts, and interpret that into a feeling, that is created in the room, by something that's evoked about the show. We do have people up here that can do that, and we do invite people up here that can do that as well." The RSC has live musicians in every show, so soundscapes can be created by using the musicians, as well as the more traditional music used in the productions.

The nature of the work can still sometimes take people by surprise. "An ASM came up to me a couple of years ago and said, 'oh, have you got a phone ringer?'" explained Dunn, "Which would be a normal thing for a sound department to have. She was gobsmacked when we didn't have one. But how many phone rings do you know in Shakespeare?" Which neatly illustrates one of the many unique aspects of working with the RSC. "I think one of the main challenges is that 99% of people in the department, i.e., everybody apart from me, has to operate shows. At entry level you need to be able to operate shows; you have to have the ability to mix live spoken word that you have no control over, with sound effects that are pretty much pre-programmed, and an orchestra that are pretty much pre-programmed – but still human. It's a little bit unpredictable."

One of the peculiarities of working with Shakespeare's plays is that the momentum of a play can be quite different to other kinds of theatre. "If you think of the opening of *Romeo and Juliet*, for example, there are various lines that are repeated and your cue line is on one of those... that one... no, not that one. And you have to be aware that some busy sequences – usually battles – they're going to happen at the end of the show, which is probably going to be about 10pm at night. So you've started the show at 7.30, and there will be a biggish opening, 10 pistols, we'll have a storm, Richard III might come on and walk through the snow if he's doing 'winter of our discontent' and all that sort of thing. Then you get to the end and there's a big battle and there's probably a couple of people on radio mics just so you can hear them. You've got Richard doing 'my horse, my kingdom for a horse', that all happens during a battle at the end. You might have had quite a slow beginning to that show, then an interval, nice cup of coffee, the lights are down a bit – and suddenly, you've got a battle to do at the end of the show at 10pm and you've got to be on top form for that. I think that takes quite an ability. You've got to concentrate until the end."

The Next Big Thing?

The next big project at Stratford is reinstating The Other Place theatre, a small studio theatre in the Courtyard, reducing the 1,000-seater as the company cannot justify two large theatres and a medium theatre. "That will bring in our new work as well, because we do quite a bit of new work, and 'Shakespeare-esque sort of theatre as well," said Dunn. "So perhaps there'll be chance to buy a phone ringer yet..." AM

Matilda

A musical about a little girl who loves to read might not sound like the hit of the season, but the RSC's production of *Matilda* is a huge success. JO FLETCHER-CROSS talks to Sound Designer Simon Baker about working with children and going to Broadway.

In 2010 In 2010, the Royal Shakespeare Company staged a musical version of Roald Dahl's book *Matilda* as a Christmas show. Writer Dennis Kelly was brought in as playwright, musical comedian Tim Minchin came on board as the composer/lyricist, with Matthew Warchus directing. In November 2011, Matilda the Musical opened in the West End at the Cambridge Theatre. Ecstatic reviews followed, and soon awards were also flying in – including nominations for all 10 categories it was eligible for in the 2012 Olivier Awards. The show won seven awards, a record amount for any show in the history of the awards. Among the winners was Simon Baker, who walked away with the prize for Best Sound Design.

The success of the show, it turns out, was actually a bit of a surprise to the production team. "When it first previewed in Stratford, there was no-one there," explained Baker. "It was only when the reviews hit that it became a massive success." Baker thinks that the show coming from the RSC includes an important factor in its success. "Opening shows in the subsidised sector is easier than opening shows in the commercial sector because you're braver and you can take more chances. It's that bravery that is going to make great work. I think being in the subsidised sector, and not having the spotlight on you quite as much, being able to take chances... that's essential."

Baker was, however, relieved to get into the West End. "Working in Stratford has been really difficult. The space has been a tough space, particularly the Courtyard. It's not set up to do a musical in as much as it's three sides – wherever you put loudspeakers, somebody can't see. It's very much set up for live, acoustic performance. *Matilda* needs to feel like a proscenium arch show. It's like a technical exercise in the West End. And it's easier. You've only got one side of the auditorium to deal with, and not three. Stratford was a pretty technically hostile environment to do it in."

Child's Play

The original workshops, done over the course of two years, featured an entirely adult cast. "Very, very late on, Matthew [Warchus] felt the audience would engage more with the story if *Matilda* was played by a 10 or 11 year old actress rather than a small adult, so that was a late change and I think that really worked." It brought its own particular challenges, however. "For a start, they just don't have the vocal power that an adult cast has, so you've got that issue to deal with. You're dealing with very tiny voices. I fought really hard to get it right. There's a solution where, with a lot of musicals, you put all the kids on boom mics and it feels wrong. You go to such extraordinary lengths to hide the technology in a show that to put kids on boom mics, it looks like some weird version of the kids from *Fame*. When you hide a radio mic, you might get a lot of clothing noises, so you've got a tiny voice and clothing noise. But we kept going down that line to make it aesthetically better."

Another issue is that the same child does not appear every night due to legal restrictions in working hours for children. Which makes it rather complicated for those involved in amplifying them. "You've got four Matildas and three groups of ten kids, so the matrix of voices is immense. There's at least 18 different versions of the show. If you do a musical with a full adult cast you get in the situation where you go, okay, we might have to adjust some things but we know what the baseline is. *Matilda* doesn't have a baseline because each set of kids brings something different. They bring different timings, different vocal energy." Which must keep them on their toes. "Yes," agreed Baker, "That's the really difficult thing about it. I mean, I did *Chitty [Chitty Bang Bang]* and *[Mary] Poppins* with kids in, but of course that was mostly an adult cast with children in it. Although the two kids changed, the adult cast were always the same. With *Matilda*, half the principals are children, so that's pretty tough."

The show is transferring to Broadway in spring 2013, and Baker will again be involved with the production. He rather likes the unionised system in Broadway theatre. "You can fight the system or you can just go with it, and if you go with it actually it sort of works. I like the idea that lunch is lunch, for example. What happens in the West End is you think, well, I'll fix that later, and in Broadway it's a much better structure because you have to say 'I need to do this so therefore we need to find time to do it." New York is much more aggressive, so you can be a lot more blunt with people and you don't have to worry about offending anybody. It's an easier place to work for me."

Matilda is a magical, lovely show, and has deservedly done very well. Baker is happy with his work on the production. "I am very proud of *Matilda*. I'm proud we made it in Stratford and transferred it. I'm proud that it worked. There's no cynicism in *Matilda*. This has been created from scratch so it does go back to that storytelling ethos of Dahl. I think *Matilda* takes the story and tells it as well as it possibly can in the most exciting way it can, and it's worked. I think that's what's really exciting about that show and I think that's why it's probably a hit."

www.matildathemusical.com

176 rack units of processing power.

And we still call it Compact.

Now with powerful new V2 features

Soundcraft®

Si COMPACT

DIGITAL LIVE SOUND CONSOLE

Now with powerful new features

Si Compact digital consoles are all about delivering tour-proven Soundcraft sound quality and massive mixing power in the smallest possible footprint. Flexible and affordable, Si Compact combines intuitive 'analogue-style' operation with a huge range of cool features and a choice of output options. And unlike some other digital mixers, all of the FX, delays, dynamics and graphic EQ processing is always available, all of the time.

New Si Compact Features

Up to 40 inputs to mix with no extra hardware • Selective Copy/Paste
User-configurable fader layers • Direct Output Gain Stabilisation

Available in 16 channel / 19", 24 and 32 channel versions

Find out more about the smallest thing to happen to digital live sound mixing in years at:

www.soundcraft.com

Soundcraft T: +44 (0)1707 665000 E: soundcraft@harman.com
Soundcraft US T: 888-251-8352 E: soundcraft-USA@harman.com

Soundcraft by HARMAN

Cultural By Design

Slovenská Filharmónia

PAUL MAC visits the Slovak Philharmonic at its newly refurbished home in Bratislava. All-new reinforcement, control, and recording technical installs have prepared the venue for its sound future...

From its formation in 1949, the home of the Slovak Philharmonic symphony orchestra (Slovenská Filharmónia) has been the 'Reduta' concert hall in Bratislava, Slovakia (which has been in public use since 1919). More recently, the orchestra had to be relocated to the Slovak National Theatre while the building underwent major building works. Now though, the Reduta has been reinforced, re-modelled, and refurbished, helped along the way by more than two and a quarter million Euros in European cultural heritage grant from Norway in 2009.

The work has included internal refurbishment, a steel-framed construction of two new floors that sit over and preserve the original roof, a new pipe organ, and new technical facilities including a main theatre control room and a recording control room. The construction of these new technical facilities was undertaken by Bratislava-based reseller, distributor, and installer, Centron.

Richard Varkonda, Centron's Technical Manager, and Stanislav Benacka, the Philharmonic's Audio & Video Chief Engineer, showed me around the refreshed Reduta.

A Room With A View

The theatre control room commands a good view of the main auditorium and probably the most impressive feature of the 700-seat main auditorium – the enormous pipe organ, which has taken over eight months to install. The front part of the control room is the audio position, with a Yamaha PM5D, and behind that is the camera operator's position. The main hall has five HD cameras permanently installed, while a second smaller hall for small ensembles and solo performances has SD cameras, though the intention is to upgrade as soon as possible.

The Yamaha is connected via 16 digital I/O channels directly to a local Pro Tools system, and the inputs to the console come from a rack of DAD AX24 A/D/As – whose outputs are shared by both the main room and the recording room. There are floor-box access points to the 32 DAD inputs spread over the whole performance floor. The PM5D though receives 32 analogue inputs, to remain independent from the recording room as far as sampling rate is concerned, while the Avid Euphonix Fusion console in the recording control room gets all channels directly via MADI. The DAD convertors are actually housed elsewhere in the building and remotely controlled by the DADman software.

There is also a BSS Soundweb/Cobranet network throughout the building, with two access points permanently installed in the main and small halls, plus one in a mobile rack, and one that is reserved for use wherever it is required – if, for example, they need to take the audio network to a rehearsal room.

The reinforcement in the hall is a new Fohhn electronically steerable array. The system particularly attracted the venue because each unit can split into two separately steerable sections, which allows presets that address different uses, with or without the balcony ▸

Euphonix Fusion console and Genelec 2832CF monitoring in the recording control room

Slovak Philharmonic's Stanislav Benacka (Left), and Richard Varkonda, Centron Technical Manager.

included. After considering other systems, it was decided that this, plus the greater number of DSP channels and more precise steering (1 degree resolution), and wide frequency response without subs made the difference.

For recording, the auditorium has a Soundfield microphone system permanently installed in the auditorium, along with AKG audience mics.

In My Room

When I visited, the main organ was having its final checks, and the sound team was waiting on the delivery of an acoustic shell from Wenger, for acoustic performances, to complete the wish list for the main auditorium. The auditorium control room was all-but complete. Originally it had been designed as two separate rooms – one for video and one for sound, but the installers, Centron, and Philharmonic staff agreed that a single room was probably best, leaving an open plan space so operators could interact. Centron applied RPG acoustic panelling to make sure that the main control room acoustics was up to spec.

Now complete, the recording control room is compact, but still impressive. It sits at the stage end of the auditorium, on the new top level, about five metres above the pipe organ.

The main gear choices consist of a Euphonix Fusion console, Pro Tool HDX, and Genelec monitoring with GLM.

The main aim with the architectural acoustics build was isolation – being part of the building the studio needs to be well separated. Then inside, accurate monitoring, but with enough diffusion to ensure a reasonably lively space where operators can communicate comfortably was key.

Varkonda designed the room, its construction, the acoustic layers and linings – and specified the air conditioning system. He had to work around the existing steel construction created during the renovation. "It makes a bridge over the concert hall," he explains, "We could not remove the roof so they built over it... We put a trapezoid steel platform on that, and on there is a layer of concrete. Then there is an isolation layer of rock wool and another layer on concrete on that... It makes a very heavy floating floor. On this floating floor we built a lightweight construction with a steel frame, and on this are two double-layered drywalls with the best insulation on the market. We used the Knauf drywall system and very heavy rock wool inside."

On the walls, Varkonda has been generous with the diffusion, using a three-way broadband RPG diffusers, plus the RPG Modex broadband absorber, developed with the Fraunhofer Institute. "I decided to use that absorber because it's only 100mm thick and very effective – from 50Hz to 5kHz.

"When we were first ready to listen to the room, I didn't have to do any tuning afterwards. The sound field is very stable and very articulated. There are no strong reflections, and the room isn't too dry or too dead, which is important."

The Genelec amps have been removed from the enclosures to save space behind the front wall.

Monitoring

As mentioned, the space is fairly limited in the control room, which is much wider than it is deep. Thus the ITU 'circle' for surround monitor positions is simply not possible without 'virtualising' it – usefully taken care of by the Genelec GLM DSP system.

The monitors are the new Genelec 1238CF Tri-amped DSP monitoring system. It's a large monitor with two eight-inch bass drivers, five-inch mid, and one-inch dome tweeter. The GLM (Genelec Loudspeaker Management network) is incorporated into the system and allows software-based control of all system parameters, plus automatic calibration and acoustic alignment of the monitors.

Rather than leave the room with too many options, the strategy was to use GLM to set up the monitoring, but then leave it that, without taking advantage of multiple presets and so on. That more usual monitoring switching is left to the console.

Interestingly, because space behind the control room walls is at such a premium, the integral amplifiers for the 1238CFs have been removed and racked up in the machine room – which also allows proper heat management without having to worry about extended wall spaces. The front monitors are soffit-mounted in the front wall.

The 1238CF is a big monitor, capable of over 124dB SPL per pair at two metres. "We must reproduce all the dynamics without any distortion," explains Varkonda. "If somebody comes in to do film music or film score recording they might want to listen at 105dB per channel, which is the standard for film. And you are calibrating for 85db in the listening position on any channel. I'm happy with it. I don't like to have a system that is missing even 1dB in dynamics. This is very important.

If somebody came to make a big band recording for example, they might expect more power. We have headroom for that."

The Euphonix Fusion is now of course fully integrated with Pro Tools, since Avid bought Euphonix and implemented the EuCon control protocol. It's also well integrated with the DADman control software for the convertors. "It's one of the best consoles," says Varkonda, "Because it's a fusion of a digital console with a controller. You can have it as a controller, simultaneously pre-amps, simultaneously Pro Tools, simultaneously Nuendo... whatever you can imagine. This is the best console on the market I think because it enables you to control everything.

"This console has a minimum configuration of channels, so we have one DSP card which enables you process 56 channels, which is enough. Mostly if they are recording classical music they'll record directly to Pro Tools, using the console as a router. Then they'd monitor through this console and mix..."

Next Stop, The World

The Slovak Philharmonic is a state owned institution and fulfills its brief with a wide range of in-house and worldwide touring performances. In addition, many performances at the Reduta are streamed and available for free via the website.

The Philharmonic already has good relationships and regular recording work with classical music labels and Slovak radio. There ambitions for recording services do extend to the wider film market, though upgraded connectivity will be required for the full range of services.

The refurbishment on the Reduta started around eight years ago and is at the time of writing was almost finished. It's an impressive job of rejuvenating an important building without damaging either the physical or the cultural heritage. Design and specification work on the audio side started 18 months ago and now can boast of facilities and services up there with the best.

Live Consoles

If you are choosing a new live console it can be easy to get distracted by the shiny buttons, flashing lights, and dancing flamingos*. Focus in on what you need to know using our guide to some of the front runners. (*made that bit up)

Allen & Heath's iLive digital mixing system separates the mix engine from the control surface so that the audio and DSP can be placed nearer to the stage. The system is highly flexible, with six different MixRacks and seven Surface models to suit varying needs. It offers options to work with Dante, Waves, Aviom, ADAT, Ethersound, and more, plus Allen & Heath's own ACE protocol, which provides an affordable way of connecting the surface to the MixRack or linking systems over up to 120m of CAT5 cable.

www.allen-heath.com

In the Venue SC48, **Avid** has combined all the I/O, digital signal processing, and tactile control of a fully integrated live sound system into a single compact console. In doing so, the company has made the SC48 its most affordable and portable Venue system yet. The SC48 offers innovative workflows designed to simplify operation, and like other Venue systems, boasts seamless integration with Pro Tools systems, and complete show file portability.

www.avid.com

The SD5 is the new incarnation of **DiGiCo**'s D5 Live, benefitting from DiGiCo's proprietary Stealth Digital Processing. It has five digitally driven full-colour TFT LCD screens, three of which are touch sensitive. The SD5 has 124 input channels, 56 configurable busses, plus up to 5.1 master, a 24 x 24 fixed matrix, DiGiTubes on every channel, buss and output, 24 assignable Dynamic EQ, 24 multi-band compressors, 24 stereo effects, 32 Graphic EQ, 10 x 4 RGB backlit macro buttons, plus the ability to add a Waves upgrade.

www.digico.biz

Allen & Heath's GLD is a complete digital mixing system, based on the GL series analogue mixers and utilising the key benefits of the iLive pro touring system in an affordable format. The dSNAKE Cat5 digital multicore together with the plug-and-play audio racks and expanders allow users to build the system as their needs grow, while networking cards allow linking of GLD systems, multi-track recordings, or connection with other systems. It offers a balance of WYSIWYG analogue-style controls and an intuitive touchscreen interface.

www.allen-heath.com

Behringer's X32 is a 32-channel total recall digital mixer with fully programmable high-end mic pre-amps, with 40 processing channels and 25 mix busses, all equipped with signal processing. Any combination of the local 32 console mic inputs or the networked digital snake inputs can be used in stage. There are six aux inputs on 1/4-inch TRS, 16 balanced XLR outputs, plus balanced control room outputs on both XLR and 1/4-inch TRS connectors.

www.behringer.com

The SD9 is a complete integrated system also powered by **DiGiCo**'s Stealth Digital Processing. Newly added features include a significant expansion in channel count, dynamic EQs, multi-band compressors and matrix, and the addition of DiGiTubes, re-order of busses and multi-channel inputs. Further new features include an expanded aux panel, increased dynamic functions such as a duck option and expander for the gate, a de-esser, and two types of knee for the compressor.

www.digico.biz

Avid's Venue D-Show System is based around the Venue D-Show console. The complete system also employs a Venue FOH Rack and Stage Rack processing and I/O system. The system's console is fully expandable and can provide total audio control of large productions from one central location. Up to three Sidecar units can be connected to a single console, each of which provides an additional 16 input faders and associated control.

www.avid.com

CADAC's new flagship digital live product console, the CDC Eight, boasts a unique 'high agility' user interface, accessed via two 24-inch 16:10 high definition LCD touch screens, a further centre located six-inch LCD touch screen accesses the system control and automation. The CDC Eight offers 128 channels expandable to 256 inputs, and a standard 48 outputs. Two frame sizes offer 16 or 32 faders. Built upon the company's latest generation proprietary DSP mix platform, processing power is delivered by eight 32/40-bit floating-point SHARC processors.

www.cadac-sound.com

Innovason's Eclipse GT console offers fully integrated multi-track recording via the company's unique M.A.R.S Multi-track Audio Recording System. The console has a compact footprint that allows users to mix up to 104 inputs simultaneously into 48 mix busses. Up to 320 inputs can be managed on the console using up to five remote audio racks. Using Innovason's SmartPanel concept, Eclipse's 48 faders and rotary knobs give the effect of 96 faders.

www.innovason.com

GLD

ACCESSIBLE, FLEXIBLE, DIGITAL

Finally, a professional digital mixing system at a distinctly analogue price. GLD takes all the key benefits of our iLive pro touring series and makes them accessible to the wider community of hardworking rental companies, houses of worship and live venues.

- Compact digital mixer with scalable, remote I/O
- Systems from 4 to 44 mics
- Cat5 digital snake - replaces expensive multicore copper cables
- Backlit colour touchscreen
- 20 faders, 4 layers, 80 channel strips in a customizable layout
- 48 input channels into 30 assignable buses into 20 mix outputs
- 8 stereo RackFX engines based on acclaimed iLive FX
- Full processing on all inputs including trim, polarity, HPF, insert, gate, 4-band PEQ, compressor and delay
- Full processing on all outputs including insert, PEQ, GEQ, compressor and delay
- USB stereo recording and playback
- 16 DCAs / mute groups
- Built-in Talkback, RTA and Signal Generator
- I/O module options for FOH/Monitor split, multitrack recording, link to iLive and more

Easy Operation

Cat5 Remote Audio

Plug & Play System Building

ALLEN&HEATH

www.allen-heath.com

Lawo's mc²56 is based on current Lawo HD core technology, guaranteeing maximum reliability, functionality, and DSP power. It can provide up to 512 DSP channels, 144 summing busses, and a routing capacity of up to 8,192 crosspoints. The mc²56 also features reduced control density and a compact frame, which maintains direct access to essential controls while de-cluttering rarer functions to a touch-screen interface.

www.lawo.de

The **Midas** Pro9 is the flagship console of the Pro Series, featuring an 88-channel input count and 35 busses, with the dual stage boxes offering placement flexibility up to 200m apart and 500m from the FOH position. The Pro9 has full range of Midas I/O box options, and comes complete with features made popular by established Midas digital systems, the XL8 and the Pro6. This includes the VCA and POPulation groups, which allow users to navigate channels intuitively.

www.midasconsoles.com

Roland Systems Group's M-480 is the first V-Mixer to support a cascade connection that enables 96 channels of mixing by connecting a second unit, via a single Cat5e/6 cable. The M-480 offers 48 mixing channels plus six stereo returns for a total of 60 channels, configurable to 90 inputs and 90 outputs depending on digital snake configuration. It has four-band advanced parametric EQ, and delays on all inputs and outputs, plus compressors and gates on all mixing channels.

www.rolandsystemsgroup.com

The mc²90 is **Lawo**'s high-end console. The desk's modularity allows the console to be used for broadcast production, as a surround studio, or as a freely configurable desk surface with up to 200 faders, with direct access to all parameters possible at any time. Equipped with high-performance DSP cards, the mc²90 offers excellent signal processing. It has integrated loudness metering, and offers 512 channels and 144 summing busses, with a 40-bit floating point.

www.lawo.de

Peavey's XR 1220 is based on dual 600-watt, class D power amplifiers that are configurable into five operating modes. Each channel is served by an XLR input and quarter-inch line input, as well as a quarter-inch channel insert, gain adjustment, 80Hz low-cut switch, and two monitor sends. A Real-Time Analyser on the master section sets the EQ curves automatically when a microphone is connected to its XLR input.

www.peavey.com

The M-300 V-Mixer is a compact 32-channel **Roland Systems Group** console with similar features to the award-winning M-400 and M-380 V-Mixers. It is a digital system targeted at small to mid-sized venues looking to replace an analogue console. Users can directly operate the Digital Snake pre-amp, control an M-48 Personal Mixer, and set up the I/O for an S-4000M REAC Merge Unit. The mixer offers four-band PEQ and dynamics on all channels, and 11 different built-in multi-effects/PEQ and delay on all outputs.

www.rolandsystemsgroup.com

Mackie's DL1608 combines a full-featured digital mixer with an iPad. Mixes can be recorded from the L/R stereo outputs directly to the iPad, allowing easy sharing with others. The DL1608 comes loaded with 16 Onyx mic pre-amps, plus 12 XLR and four combination mic/line inputs, so connecting microphones and instruments is quick and easy. A 114dB dynamic range is provided by high-end 24-bit Cirrus Logic AD/DA converters. The console supports up to 10 iPad devices simultaneously, allowing multiple engineers to control the mix.

www.mackie.com

PreSonus' StudioLive 16.4.2 is a rack-mountable mixer for small shows. It features proprietary high-headroom XMAX microphone pre-amps, a built-in FireWire recording and playback interface, more than 90 signal processors, a large library of DSP effects, six aux busses, four subgroups, and extensive LED metering. It is designed to be approachable for new mixers and those unfamiliar with digital consoles.

www.presonus.com

Samson's L3200 is a 32-channel, four-buss live mixing console. Six flexible auxiliary sends allow for up to eight monitor and effects mixes. It offers 24 channels with pre-amps and four-band EQ in addition to four stereo channels, two of which have mic pre-amps. It is also capable of creating an independent stereo mix for computer recording and playback via USB.

www.samsontech.com

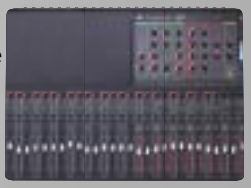
The **Midas** Pro2 and Pro2C are the smallest and least expensive Midas digital consoles so far, but the company says they represent a "quantum leap forward in both technology and concept for the art of audio mixing." Pro2 can be operated in a number of different ways. In 'normal' mode, Pro2 behaves in a manner similar to many other digital consoles. As an operator becomes increasingly familiar with the console, they can activate the advanced navigation features. Pro2C is a minimum-footprint, compact form of the Pro2.

www.midasconsoles.com

The StudioLive 24.4.2 from **PreSonus** is very similar to the 16.4.2, the big difference is that it offers 24 mic/line inputs rather than 16. New features (also available on the 16.4.2) include PreSonus' free StudioLive Remote for iPad, allowing control of the mixer from anywhere in a venue or recording studio. The QMix app, also free, gives each band member control of their own StudioLive monitor mix from an iPhone or iPod touch – permissions can be set on this to ensure that users cannot tamper with other monitor mixes.

www.presonus.com

Drawing on the heritage of **Soundcraft**'s Si Series digital live mixers, the Si Compact 32 packs powerful digital mixing facilities and Lexicon effects into a small footprint console with 32 recallable mic pre-amps plus four stereo returns, AES in and 64-input option slot with a capacity to combine up the 40 of these inputs to mix. Each input is fully equipped with compressors, gates, parametric EQ, high pass filter, and delay.



www.soundcraft.com

Soundcraft's Vi1 was introduced to the company's Vi series as a more affordable model of the established platform. The Vi1 is a complete stand-alone console package with 32 channels of analogue input to 27 analogue outputs, plus six digital inputs, four stereo FX returns, and six digital outputs.

Like other members of the Vi series, the Vi1 features a Vistonics user interface. The widescreen interface displays all parameters for 16 channels side by side.

www.soundcraft.com

Stagetec's Crescendo mixing console has a slimmed down user interface and reduced feature set. The number of busses and channels are freely configurable, with configurations of up to 300 audio channels and 128 summing busses being supported. It also has extensive snapshot and scene automation, making it an ideal solution for theatre use. It is available with up to 48 channels strips and a master section.

www.stagetec.com

Yamaha's new CL series digital mixing consoles offer an 'evolved experience in accessible mixing'. The series comprises three models: the Cl1, CL3, and CL5, ranging in mix capacity from 48 to 72 mono plus eight stereo inputs. All models feature 16 DCAs, 24 mix and eight matrix busses, plus stereo and mono busses. Yamaha's Centralogic user interface is at the heart of the series, incorporating a new generation, highly responsive colour touch screen and an array of user definable rotary encoders and buttons.

www.yamahaproaudio.com

The Aurus from **Stagetec** offers classical direct access to channel parameters, with up to 96 channel strips. It has a clearly laid out control that is very similar to an analogue desk, and features high resolution metering with an optional analogue response curve. Aurus has up to 300 audio channels depending on the configuration, 128 busses, and up to 32 full channels per DSP board, again depending on configuration.

www.stagetec.com

The **Studer** Vista 8 Digital Live Production Console follows on from the Vista 7, and similarly incorporates the Vistonics User Interface, but this time has extended the concept to provide excellent output monitoring and other features. The new Control Bay design offers more faders in a smaller footprint, and a sophisticated snapshot system and dedicated mute groups make it a good choice for fixed install live applications such as concert halls and theatres.

www.studer.ch

The PM5D was launched by **Yamaha** in 2004, and has become a standard for many engineers. It is a small lightweight system that is intuitive to use, providing excellent sound, control, and reliability without the need for additional outboard processing gear. It uses Yamaha's DME series digital mixing engines, and AD8HR eight-channel A/D converters with remote controllable pre-amps. For those who need serious I/O capacity, the PM5D-EX is an expanded digital mixing system with double the I/O capacity and processing power.

www.yamahaproaudio.com

WINTER GAMES Vancouver 2010
OLYMPIC STADIUM Athen 2004
SPENGLER CUP Davos 2010
WINTER GAMES Salt Lake City 2002
LONDON 2012
SKI WORLDCUP Val d'Isere 2008
AMERICA'S CUP Valencia 2007
OLYMPIC STADIUM Beijing 2008
NBA FINALS Miami 2011

NEXUS
THE STANDARD SOLUTION

AND THE WINNER IS...

SALZBRENNER
STAGETEC
MEDIAGROUP
sales@stagetec.com
www.stagetec.com

STAGETEC

Midas PRO2C

Compact it may be, but the PRO2C looks set to run rings round any competitors, says BEN BURNS, as he gets his hands on Generation-II software.

To anyone working in live audio, Midas consoles need no introduction. The latest digital offering may be the smallest, lightest, and least expensive digital Midas console to date, but it packs enough punch to feel at home in many demanding live environments. The review unit was a PRO2C (C = Compact), but these words could apply equally to the larger standard PRO2, except where the slightly larger surface is concerned. The console is sold as a package, complete with a flight-case, DL251 stage-box, cat5 connections good for 100m, plus an illuminated computer keyboard. It's impossible to mention everything about the console in this short review, but I hope my observations from using it will provide some insight.

> "The latest digital offering may be the smallest, lightest, and least expensive digital Midas console to date, but it packs enough punch to feel at home in many demanding live environments."

Capabilities: I/O

As standard, the console comes with a DL251, giving you a stage box with 48 analogue XLR mic inputs and 16 XLR line outputs in a fixed architecture. Two pieces of cat5 are required to link this stage-box to the console. You can add further I/O box units, multi-track recorders, and other options to the remaining four AES50 ports on the console, if you can afford it.

The console provides eight analogue mic/line audio inputs and outputs, plus three digital AES/EBU input and output pairs. Eight additional outputs are labelled as master outputs, talkback I/O, and local monitor sends. A very much appreciated and highly professional touch is how the default state of the console has all these outputs pre-routed to do exactly those things.

In addition to the audio I/O outlined above, MIDI is available at the stage end of things, whilst wordclock and further MIDI is provided on the console itself.

It is possible to share the stagebox inputs with a second Midas console, but this means one console will have no analogue gain controls, as there is only one pre-amp per channel in the DL251. It is possible to trim the digital gain for each input , -40 dB to + 20 dB, on the 'listening only' console, which affords you enough control to line up the console input channels as required.

Network

As far as I understand it, you can do point to point routing from anywhere to anywhere on the network, without going 'through' the console in the form of channels and outputs – a handy feature. For the price of an iPad and a wireless router, you get a fully integrated remote control system – see every input and output meter at once, change basic mix levels plus MCAs and graphic EQs, and other useful things. I don't have an iPad so didn't play with this, but I did get a personal demo of it working and it looked very slick and easy to set up.

New Features

The software under review (generation 2) includes some new effects units of worthy note. In fact, the effects just got very expensive sounding and much easier to use than before.

All of the six effects 'modules' can be set up to sync to various subdivisions of the global tempo. The dedicated tap tempo switch can be set to flash all the time, or self cancel after a few seconds.

Other features include the 'extend to mix bay' feature – having some inputs on the left side of the console and pressing this very purple button 'extends' the inputs to continue across all 16 faders. The three master faders can also be used as the 'area b' section, giving you a maximum of 20 input faders at once.

MCA, or mix control association is a fantastically powerful concept – basically enabling your VCAs ▸

THE REVIEWER

BEN BURNS is a London-based freelance engineer – both live and studio – with credits including Blur, Dido, Embrace, Happy Mondays, and more.

AKG
by HARMAN

Compromise wires,
not your sound.

DMS70 DIGITAL MICROPHONE SYSTEM

When you're on stage, delivering your presentation to a captivated audience, there's one thing you've got to trust: Your secure sound. Introducing the AKG DMS70, the reliable, easy-to-use four channel encrypted wireless system designed for those who want to enhance their stage presence. With it, there's never a need to focus on complex technical preparation - just sync up and focus on the one thing that matters most – your audience.

akg.com

- ★ Superior audio quality
- 1.2.3. Simple to use
- License free
- Add up to 4 channels

ADV 712/1/E

to be adjustable for each mix buss. Say a musician wants more drums in a monitor mix, simply choosing the relevant mix and pushing up the 'drums' VCA will do the job very fast. There are more features to the advanced navigation mode, which make routing anything to any mix very quick and easy – once you get used to it. If you are looking after someone who is not familiar with these concepts they can be disabled in the preferences.

Other modes of navigation let you select a mix, instantly bringing up the faders being sent to that mix and displaying the effect unit (or graphic EQ) on the screen ready for editing with eight pots or faders. Once you get the hang of these concepts (a few minutes for most engineers) it is the fastest way of doing things I have ever seen.

First Impressions

I like to learn a system once and then apply that knowledge to any product in the series – something that Midas does very well. If you have used any Midas digital system, then the PRO2C will seem familiar as the main controls are the same – the hardware controls that have vanished from the control surface still exist in the software.

Having immediate access to all the outputs on the console, including mute, meters, talk, and solo is essential. Midas beautifully integrates very clear information with uncluttered layout, and the ability to instantly select any output buss and work on it immediately.

By leaving room for PVC tape, all the console outputs masters can be labelled clearly, as you like.

In Use

Before I got my hands on the actual console, I decided to try out the PRO2 editor software – which only runs on Macs as the Midas desks are Linux based. The few bugs in the offline software will be ironed out very soon, but you can still get a good grasp on things before you walk up to a console for the first time.

Patching inputs and outputs on the console is very easy, it is done graphically using pictures of virtual XLR sockets – a mouse driven assignment system boasts various modes to make quick selections of multiple channels possible. I found this quick and easy once I got used to it – selecting the entire stage box and patching 48 inputs to the console 1:1, for instance, takes under three seconds.

You can assign anything anywhere you like, a matrix direct output to gate key filter for example. As with everything on the console, there is a preset library, so you can store and recall your own custom patch files, compressor settings, EQs, effects set-ups, etc.

One undeniable fact regarding the entire PRO series, is that they simply sound fantastic.

The converters and mic input amps are wonderfully capable of being slightly abused, whilst producing transparent results. Output D/A converters also sound top notch and are designed to drive long cable runs with ease.

The EQ is able to sound as sharp or as musical as you like – a real joy to use and listen to. Simple things like the instant response time of the controls (and the graphics) give the console a real analogue feel. The transparency in the high end sounds beautifully clear and open (if you have a nice room and speakers to listen to it in!). The low end is fat, warm, rich, and very smooth. When sweeping through the frequency ranges it sounds like a posh studio toy, not a live mixing desk. You get a four band parametric EQ on each input channel – that's in addition to the two filters, which each have a dedicated hardware control and various db/octave settings.

> "Once you get the hang of these concepts (a few minutes for most engineers) it is the fastest way of doing things I have ever seen."

Each input and output hosts a compressor, switching between modes gives you the same compressor settings applied to the different compressor models – there is an output compressor called 'shimmer', great for IEM or front fill processing for example. Subtle differences can be hard to notice in horrible live environments, but in the studio these modes make a massive difference to the style of compression being applied. Using the creative compressor gives you 'studio' sound possibilities for instruments like snare drum and guitars, whilst the vintage version is warmer and great on things like bass and keys.

Configuring the console to your needs is obviously essential – one setting you want to get right is the delay compensation feature. The problem, as you are no doubt aware, is that any digital audio process takes a finite amount of time to complete, delaying the audio signal. This in itself is not a massive issue, the real problems start arising if you combine this delayed signal with the original slightly-earlier signal. Comb filtering will create massive holes in the frequency spectrum of the summed signal, or, to give it the technical name, 'robot voice'.

The way round this problem is to delay anything not processed by the exact amount of time it takes to process anything else in the same summed mix. All Midas consoles know about this stuff, and have a clever way of dealing with it – so long as the settings are correct for the processing you want to compensate for, the system works everything else out.

The only other thing you really have to know, is how to save a scene and a show. You MUST do this or there will be an embarrassing silence if the 'safe' scene is recalled at the wrong moment or by mistake. Nothing on the desk exists until it is in a scene and a show, save a scene then save the show, always.

Graphic EQs

Editing onscreen graphic EQ controls is a bit tricky. Purchasing the the DN9331 remote fader unit gives you dedicated hardware controls for each of the 31 frequency bands, but watch this space for an affordable controller option. There are several ways to adjust the graphic EQs – the eight faders in the middle bay can control (and scroll) blocks of eight frequencies, or you can use the navigation keys and assignable rotary controls to edit blocks of virtual sliders.

Editing graphic EQs on the ipad was a bit tricky, with small on-screen controls demanding the use of a stylus pen – this is purely a software change and will be addressed at some point. The graphic EQs sound good – running a transfer function reveals the phase shifts created by using the EQ are nice and low. As well as 31 1/3rd octave band sliders, there are two notch filters and two filters, ideal for 'shaping' the output EQ to your requirements.

FX

With six 'rack spaces' available for effects units, each able to have eight inputs and eight outputs (modules are not all eight-channel), there is plenty of scope for onboard digital effects here. The digital version of the square one dynamics module uses all eight I/O ports, whilst the dual stereo delay uses four. Reverbs at the moment are all just stereo – again, these things are easily updated via software. The possibilities of multi-channel effects engines are far reaching. By freeing up effects slots you can get more into multi-band compression, or how about an eight channel matrix mixer, assignable on the network without eating into the console's channel count?

Automation

Powerful automation features include a recall scope (which you can change in every way for each scene) and also a store scope. This enables a show to be programmed to only affect the items you are concerned with, whilst not changing anything else on the console. In addition to this software-based recall scope are hardware safe switches for each input and output on the entire console – engaging any of these six switches will guarantee that item will do nothing when you recall another scene or show file.

One of the best things I've ever seen on a digital console is the way a new show is loaded. When you load a show, Midas PRO2 consoles will keep the current scene loaded, active, and fully controllable until a new scene is recalled from the newly loaded show. Not only this, but the active scene can then be saved to the newly loaded show as a scene. This is a very important feature, allowing the seamless uninterrupted recall of different shows, and an easy logical way to copy scenes between show files. Other desks really do this very badly, with some of them taking ages to mute everything, reboot, and then load something.

I was particularly interested in the automation system, which boasts some clever features that make it very quick to do things. The show editor allows any parameter(s) from the loaded scene to be copied to any other scene(s) very quickly.

You can configure the desk to output MIDI or GPIO signals when scenes are recalled, as well as internal cross fades, text messages, and other things.

The Midas PRO2.

Conclusion

It would seem as though every different system on the market has its own quirks, good and bad. Midas has created a beast that I hope will be popping up in venues of all sizes. It does however take a little getting used to: anyone wanting to feel confident walking up to a PRO series console could download the software and go for a training day. There are concepts that, once grasped make the console an absolute joy to work with – as well as being incredibly quick. The sonic openness and clarity of the system should really be compared to anything else to be believed. Even without this comparison handy you can hear how good this thing sounds.

There is not much to dislike about the console – when comparing any other digital desk with similar capabilities any minor gripes I have soon fade into insignificance. I would like to see AES outputs on the stage rack, but anyone with this requirement can easily add digital I/O by purchasing a modular I/O unit. I reckon this little desk is going to give the competition something to worry about. The PRO2 and PRO2C consoles are fantastically powerful little systems that can easily run sonic rings around the competition.

INFORMATION

£ PRO2 TP (Tour Pack): US$29,400.00
£ PRO2C TP: US$22,700.00

Ⓐ Midas, Walter Nash Road, Kidderminster, Worcs, DY11 7HJ
Ⓣ +44 (0) 1562 741515
Ⓦ www.midasconsoles.com

Television Technology: Part 9

KEVIN HILTON looks at how the first brave steps into the digital realm were dogged by trouble, and ultimately, failure – before paving the way for greater things.

The fundamental nature, or logic state, of a digital signal, whether it be video, audio, or data, is that it exists as either a 1 or a 0. In television technology when a digital signal is employed to modulate a carrying medium – such as a radio band – the data can be transmitted using one of two forms of carrier amplitude: frequency or phase.

Phase modulation – also called phase shift keying (PSK) – is regarded as the best option purely as an economic way of using bandwidth. This involves keeping an invariable carrier frequency but changing the phase in harmony with the logic state of the data bit. The logic state of a binary signal is defined by the voltage level or current value of the signal, which is itself established by the technology of the device. Other phase-based modulation techniques include Binary PSK (BPSK), quadrature PSK (QPSK), and differential PSK (DPKS).

BPSK involves two-phase modulation, when the carrier is generated using a reference phase to show logic 1, with logic 0 represented by a phase change of 180-degrees. OPSK is a four-phase system in which the serial bit stream goes through a serial to parallel conversion process to become a two-bit parallel signal. In all four phase configurations possible for QPSK, the two-bit permutation called the symbol has a rate, alternatively known as the baud rate, which is half that of the bit rate. The symbol/baud rate is the measure of the phase change and this ultimately decides the bandwidth. Double the amount of data can be transmitted in the same bandwidth when QPSK is used instead of BPSK.

DPSK does not have a precise reference phase. Phase shifts only happen when the current bit varies from the preceding bit, so the phase reference is the signal phase that was produced before. The benefit of this is that the transmitter and receiver do not have to be linked by an ultimate phase reference to which the phase of the signal being received is measured against. A hybrid system, differential quadrature PSK (DQPSK), brings together the positive aspects of QPSK and DPSK.

An enlargement on PSK is quadrature amplitude modulation (QAM), which is used for digital transmission in cable networks. The change from PSK is that QAM is based on having the amplitude of some phasors, the lines that represent a complicated electrical quantity as vectors, to give greater bit representation.

QAM encoded signals are regarded as efficient and well suited to cable transmission, but do not lend themselves well to digital terrestrial television (DTT). This is because terrestrial broadcasts are susceptible to weather conditions and reflections from high structures, such as tall buildings and mountains, and aircraft. In technical parlance these obstacles and distractions are called multiple path interference, referring to the reflected signals that arrive at the receiver in addition to the original signal.

Because the additional signals are reflections they reach the receiver after the main transmission. During the days of analogue TV this would manifest itself as a shadowy, less substantial picture in addition to the main image, an effect called ghosting. In the digital age the effects of reflected signals are intersymbol interference, a type of distortion in which one pulse (symbol) adversely affects the symbols following it, and fading of the transmission. Both of these can produce interrupted pictures and sound, as well as picture noise. Whether this break-up is complete or in part is dependent on how much delay there is between the original signal and its reflections.

Multiple path interference can be eliminated or minimised through the use of Orthogonal Frequency Division Multiplexing (OFDM). This is used for digital satellite broadcasting, which, although it has a more direct and less obstacle-strewn transmission path than DTT, can still be susceptible to reflected signals. Because terrestrial transmission suffers from the additional problem of frequency-dependent noise, stemming from narrowband signals that cause interference within the bandwidth, a more heavy-duty form of forward error correction (FEC) coding is required.

This is included in Coded Orthogonal Frequency Division Multiplexing (COFDM), which comes in two flavours: 2k, employing 1704 individual carriers, the other pegged at 8k, using 6816. The whole process is based on employing echoes, increased power and grossing up the signal, all backed by a complicated mathematical process called Fast Fourier Transform. The practical result is that DVB-T – the DTT standard drawn by the Digital Video Broadcasting Project (DVB) – can cope with unsuitable terrain. A 2k system has several options for guard intervals, which deal with transmission echoes, and is regarded as will suited to mobile reception because it can employ the Doppler effect. But 8k is better suited for extreme conditions and tougher terrain, such as mountainous regions, as it offers a more complete solution and is designed for single frequency network (see glossary) applications. The two technologies are compatible to the extent that 8k receivers can pick up 2k as well.

ON To Air

The DVB-T specification was published in 1997 but the UK government had already written plans for DTT services into the 1996 Broadcasting Act. Consequently the world's first DTT service went on air in November 1998 across Britain branded as ONdigital. The multiplex licence was awarded to British Digital Broadcasting (BDB), a consortium consisting of UK commercial terrestrial broadcasters Carlton Television and Granada Television, which won an auction for three multiplexes. Another three multiplexes were given to the existing analogue broadcasters – the BBC, ITV, Channel 4 (S4C in Wales), and Channel 5 – for free-to-air broadcasting.

ONdigital was conceived along similar lines to satellite and cable subscription services. Viewers would pay a monthly fee that would allow them to watch a wide selection of channels, in addition to free simulcasts of BBC, ITV, C4, and C5 programmes. Subscribers were given a branded receiver and a viewing card, which gave access to the encrypted subscriber services.

BDB originally also included satellite operator British Sky Broadcasting (BSkyB) among the partners but the UK regulator at the time, the Independent Television Commission (ITC), ruled that the company could not be ▸

GLOSSARY

Advanced Video Coding (AVC)

Single-frequency network

A single-frequency network (SFN) involves the use of multiple transmitters at the same time to carry the same signal over the same frequency channel. The technique has been used for many years in analogue FM and AM radio broadcasting and is now employed for digital terrestrial television broadcasting. The thinking behind a SFN is to use the radio spectrum more efficiently with more TV or radio channels carried than on a multi-frequency network (MFN). A SFN can also give greater coverage while at the same time reducing the possibility for power failures compared to a MFN, as the overall received signal strength might rise at locations between the transmitters.

REFERENCES

Newnes Guide to Television and Video Technology by KF Ibrahim, Newnes 2007

ONdigital history
http://www.onhistory.co.uk/ondigital

Television Technology: Part 9

news

Transmission specialist Arqiva has been awarded a £1 million contract to design and build a digital broadcasting network in Gibraltar. The work will be done on behalf of the Gibraltar Regulatory Authority (GRA) and involve building a multiplexing and transmission system for both digital TV and DAB digital radio.

The new network will include two TV multiplexes, which will be able to accommodate up to six programme services each, while the two radio multiplexes will be able to carry a total of eight services. The intention is to give a wider selection of programmes for residents and visitors, with the option for new broadcasters to be licensed by the Gibraltar government.

Because the transmitters will be positioned at a single site on the Upper Rock, the hope is that any impact on the environment will be minimised. The new antenna structure will replace two existing television transmission sites.

Commenting on the contract, Steve Holebrook, Managing Director of Arqiva's broadcast and media business, said, "Our work implementing the UK switchover provides an opportunity for Arqiva to help other countries go digital and benefit from the pioneering work we have done over the last five years or so. We're delighted to bring digital broadcasting infrastructure to Gibraltar, with all the benefits to consumers, broadcasters, the regulator and the government.

Paul Canessa, Chief Executive of the GRA, added, "It's very reassuring to have Arqiva building our new digital networks. It's a big step for us and to have the acknowledged experts delivering our infrastructure means we can proceed towards our TV switchover with confidence."

The digital broadcasting network is due to be operational by December 31, 2012, coinciding with Gibraltar's international obligation end analogue television transmissions by that time. At this time there is no intention for FM radio in Gibraltar to be switched off

included in the bid for the licence. As a consequence BSkyB withdrew from the consortium but was still contractually obliged to provide access to some of its channels as part of the subscription package.

The licence for the three commercial multiplexes was awarded in December 1997 and ONdigital went on air less than a year later. The company was based at Marco Polo House in London, near Battersea Power Station. This is an ironic choice of premises as it had originally been occupied by British Satellite Broadcasting (BSB), the failed competitor to Sky that had been taken over by its rival in the early 1990s after a less than illustrious career.

Despite supplying many of the channels for ONdigital, Sky was now the main competitor to the digital terrestrial newcomer. Other services in the offering included UK Gold, UK Play, FilmFour, and Cartoon Network, with 15 primary and five premium channels in the package. ONdigital was also heavily involved in developing interactive services for DTT, based on the MHEG-5 specification.

Rumours Of Trouble

Despite competitive pricing and a comparable range of programming, ONdigital was always behind BSkyB, which launched its Sky Digital service in direct competition. There were also rumours of underhand tricks, including ONdigital codes being distributed by hackers so viewers could cancel their subscriptions but still get access to the programmes. This resurfaced recently as part of the controversy over phone hacking by newspapers owned by News Corporation, which is part owner of BSkyB and had been trying to gain outright control. News Corp and BSkyB has always denied any involvement in the hacking of ONdigital encryption codes.

ONdigital's subscription and commercial troubles were not helped by technical problems. Because 64QAM had been selected as the carrier system there were interference problems, compounded by weak signal strength in some areas. Eventually Carlton and Granada decided to rebrand the service, doing away with the cumbersome and unfamiliar ONdigital name and using the far more familiar ITV instead.

ITV Digital took over in July 2001, backed by a new ITV Sports Channel, with expensively gained rights to English Football League coverage, and a popular but ultimately unsuccessful advertising campaign starring comedian Johnny Vegas and a kitted simian puppet called Monkey (voiced by comedy actor and writer Ben Miller).

None of this made much difference, with Sky gaining ever more subscribers, largely due to having live rights to Premier League football. The DTT service's cause was not helped by other members of the ITV network, specifically Channel Television, Ulster Television, and SMG (owner of Scottish TV and Grampian TV) objecting to the use of the ITV logo and name, pointing out that Granada and Carlton did not have exclusive rights to it.

All this eventually proved too much and after the Football League refused to agree to a substantial cut in ITV Digital's fee for the TV rights, the service went into administration in March 2002. The vacant broadcasting licence was granted to a new consortium comprising the BBC, BSkyB, and transmission company Crown Castle Communications, which proposed to launch a non-subscription based digital service. Freeview went into operation in October 2002 with 30 TV channels and 20 radio stations. It proved successful and led to a satellite service based on the same free-to-air principle, Freesat, which went on air in 2008.

The next Video Guide will look at the second generation versions of the DVB specifications for cable, satellite and terrestrial broadcasting, before examining the development of high definition television.

THE Buyer's Guides for Professional Audio

All you need to know for Monitors, Microphones, Recorders, Consoles and Live Sound.
All available to download as PDF's from our website

Call now to be included in the next Guide

call Graham Kirk on +44 (0) 1223 911224 g.kirk@audiomedia.com

www.audiomedia.com

win!

Each month, sE Electronics and *Audio Media* are giving away an sE 4400a microphone to one lucky subscriber. All you need is a subscription to *Audio Media* magazine (digital or print) – if you don't have one, complete this form or subscribe online at www.audiomedia.com. All new subscriptions will automatically be entered into that month's prize draw, and the winner drawn at random from our complete subscriber list, contacted by e-mail and announced in the following month's magazine.

"I've found the 4400a to be a hugely versatile mic – it's great for acoustic instruments, and I especially like it on drums and percussion. Its hyper-cardioid pattern is extremely useful on toms and snare as it control cymbal spillage really well and delivers great punch and tone"

Gil Norton: Foo Fighters, Pixies, Gomez, Feeder, Counting Crows, Maximo Park

- 4 polar patterns
- 10 and 20dB pad
- 60/120 bass cut
- Multi-function shock mount (patent pending)

T&Cs
1. Only one entry allowed per subscription/subscriber.
2. Entry to the draw is only through subscription.

www.seelectronics.com

sE Sound Engineering

Subscription Form

To qualify for your free subscription you must complete all the questions below:

1 JOB FUNCTION *(please circle)*

A Managing Director/owner/corporate Management
B Studio/facility Manager
C Producer/director
D Chief Engineer
E Independent/freelance Engineer
F Engineer/technician
G Sound Design/editor/mixer
H Operations/production Manager
I Consultant
J Sales/marketing/admin
K Artist/musician
L Studio Designer
M Trainee Audio/Video Professional
N Other

2 TYPE OF BUSINESS *(please circle)*

A Commercial Recording Studio
B Project/private Studio
C Audio/video/film Post Production
D Audio/video/film Production
E Broadcast Production
F Tv Station
G Radio Station
H Live Sound Production
I Contractor/installation
J Venue/auditorium
K Remote Truck/location Recording
L Mastering/replication/duplication
M Rental/hire
N Acoustics/facility Design
O Multi-media/internet Web Creation
P Record Production Company
Q Corporate/government/telecomm
R Dealer/distributor/retailer
S Manufacturer
T Education/training Facility
U Media/industry Association
V Other
X Games Audio

3 FIELD OF WORK *(please circle)*

A Audio Only
B Visual Only
C Audio and Visual

4 PURCHASING AUTHORITY *(please circle)*

A Authorise
B Specify/recommend
C End user only/none

5 PURCHASE INTENTIONS 2011–12 *(circle all that apply)*

A Microphones
B Processors/Plug-ins
C DAW technology
D Recorders
E Monitors/ Headphones/ Amps
F Live Sound Reinforcement
G Pro Video Technology
H Consoles

NAME .....
JOB TITLE .....
COMPANY .....
ADDRESS .....
TOWN / CITY .....
COUNTY / STATE .....
COUNTRY .....
POST CODE / ZIP .....
TEL. ..... FAX .....
E-MAIL ..... @ .....

I M P O R T A N T :
Sign here if you wish to receive AUDIO MEDIA

Signed..... Date.....

This application is not valid unless every section is completed and it is signed and dated. If you do not qualify to receive AUDIO MEDIA without charge, it is available by subscription at:
£43 UK, £60 Europe, £65 Rest of World.

Once you have completed this form please return to IMAS Publishing (UK) Ltd. You may fax back to us on:
+44 (0)1354 669965, mail it to us at Audio Media, Imas Publishing (UK) Ltd, Subscription Dept., Suite L16, South Fens Business Centre, Fenton Way, Chatteris, Cambs, PE16 6TT United Kingdom, or visit www.audiomedia.com/subscribe.html and fill out a subscription form for Audio Media.
Incomplete forms will not be processed. This information is used for IMAS subscription purposes only.
The Publisher offers free subscriptions on a limited basis to those who meet publisher's definition of qualifications and reserves the right to not serve or discontinue free subscriptions at any time.

SERVICES

GK Acoustics
"Quality Professional Acoustics Panels and Traps at Affordable Prices"
The new GIK Scopus (Tuned) Trap takes low end control to a new level in three options that cover 30hz to 135hz with maximum targeted absorption incorporating a pressure-based membrane design and an air tight chamber.
Specially designed for controlling lower frequencies within rooms.
www.gikacoustics.co.uk
+44 (0) 20 7558 8976

aes
PRO AUDIO
THE VINTAGE NEVE SPECIALIST
WANTED
OLD NEVE & SSL CONSOLES
(ANY CONDITION CONSIDERED)
AES PRO AUDIO IS A UNITED KINGDOM COMPANY WHO PURCHASE WORLDWIDE
TEL: 01932 872672 FAX: 01932 874364 TEL INT: 44 1932 872672 FAX INT: 44 1932 874364
email: aesaudio@intonet.co.uk www.aesproaudio.com

RECRUITMENT

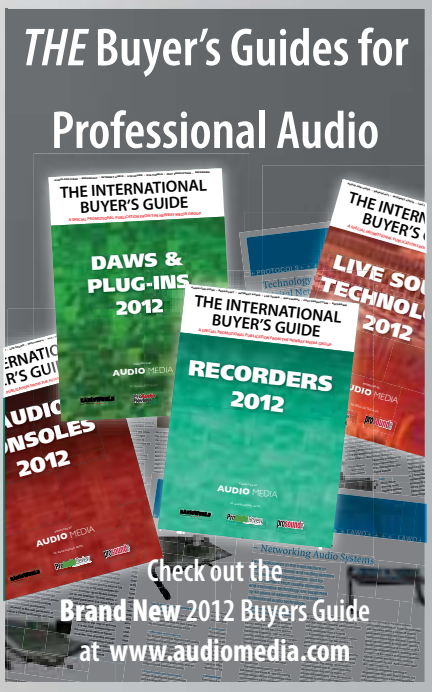
Live for sound?
Get a Sound life.
Interfacio provides a unique industry expert search and selection service within the Pro-Audio, Live Sound, Music and Broadcast technology industries. We have a proven record of finding and placing carefully selected and high-calibre individuals in sales, marketing, engineering and management. Our clients are based throughout the USA, Europe and Asia and are now looking to attract new sales, marketing and technical talent - from graduates through to senior business executives with relevant experience who are looking to progress or develop their careers within the industry.
UK Sales & Business Development - Networked Audio; UK South GBP 45-60k
DACH Territory Sales - Broadcast Comms; Germany/Flexible EUR 70-90k
Director of Product Management - MI/Pro-Audio USA West USD 140-160k
Japan Business Manager - MI/Pro-Audio; Tokyo, Japan USD 120-150k
Asia Territory Business Manager - Sound Reinforcement: Flexible EUR 70-80k
Sales Engineer - Broadcast & Theater - Pro-Audio; USA Mid West USD 60-80k+
UK Sales Manager - Pro-Audio Products; UK, Flexible GBP 50-70k
Interested? Visit the website and contact us in confidence to find out how we can help you or talk about these and other vacancies.
interfacio
global media technology recruitment
Experienced industry professionals helping to develop careers and finding the right faces for the job.
web : www.interfacio.com
email : applications@interfacio.com
telephone : +44 (0) 20 8986 5002
los angeles new york toronto london sydney singapore hong kong

STUDIO ACOUSTICS

The Studio People
01743-885244
07977-043763
www.studiopeople.com
from designing a small v/o booth to building your multi-room studio complex ...we do it all!
CALL US NOW FOR A FREE QUOTATION AND ADVICE

SERVICES

Gasoline Media
Public relations consultancy
Your own PR is always the hardest. Gasoline provides a targeted service for the entertainment technology industry, so let us do it for you.
www.gasolinemedia.com


THE Buyer's Guides for Professional Audio
THE INTERNATIONAL BUYER'S GUIDE
DAWS & PLUG-INS 2012
RECORDERS 2012
CONSOLES 2012
AUDIO MEDIA
Check out the Brand New 2012 Buyers Guide at www.audiomedia.com

Alien

Tension and unease build skillfully through the use of sounds throughout this horror, which the 'indirect prequel' of newly-released *Prometheus* will struggle to beat, says KEVIN HILTON.

RIDLEY SCOTT describes *Prometheus*, which goes on general release this month, as an "indirect prequel" to *Alien* (1979), but it clearly has echoes – pre-echoes – of the earlier film's story, design, and atmosphere. Scott, who directed both, built his cinematic reputation on a moody, light drenched visual style, but Alien shows he understands what music and sound can bring to a film. From the beginning a sense of foreboding is built up by Jerry Goldsmith's score and a dense, almost constant mix of audio effects and backgrounds created by Sound Editor Jimmy Shields.

For the opening titles and establishing scenes, Goldsmith produced something that, when it begins, does not sound much like music. Indistinct noises, percussion beats, and unsettling strings build up for the appearance of the hieroglyphics-like word 'Alien'. This cuts to first sight of the Nostromo, not so much a star ship, more a refinery in space, as it rumbles past the camera.

This is not a glamorous craft and its crew is made up of scientists and technicians, not explorers or adventurers. This industrial environment is established during the first interior shots by the thrum of the engines and generators. A rising and falling hum is audible through most of the film, working with the music to create a sense of unease. Scott says in his DVD commentary that Shields used a lot of organic sounds in the mix, including a pulse, and processed them to create something natural and unnatural at the same time.

The semi-tranquillity of the Nostromo on autopilot is broken when the communications system crackles into life. A signal is received, connecting with the ship's computer, known as 'Mother', in a series of chattering clicks, buzzes, and circuit noise. The ship itself is now fully awake and sets about rousing the crew, who are in hyper-sleep inside stasis units. The music takes over as the capsules open, a musical sequence Scott describes as "poetic".

The audience meets the characters at their first meal. Their chatter overlaps, something Scott says he wanted in the six-track Dolby mix because it comes across as loud and aggressive, making the listener feel stressed and uneasy. An insistent beeping from Mother calls away the captain, Dallas (Tom Skerritt), to receive new orders for the Nostromo.

A signal has been picked up from a rock of a planet and the crew is ordered to investigate. They set off and for the first time Goldsmith's sound-track approaches what might be expected for a space epic, only undermined by enough discords to suggest all is not well. The ship is buffeted by the planet's atmosphere, causing grinding noises that make it sound like a rickety old car, emphasising that this technology is not perfect.

On the planet Dallas, his second in command Kane (John Hurt), and navigator Lambert (Veronica Cartwright) struggle across rocky terrain with a vicious, but almost musical, roaring wind around them. They find an abandoned alien ship with a bay full of strange pods inside. As Kane examines the leathery egg sacks, one opens with a slurping sound. He unwisely leans over to look and, with a whip-like noise of movement and a scream, a creature attaches itself to his face.

Back on the ship the science officer, Ash (Ian Holm), discovers the face-hugger cannot be moved; if touched it tightens its grip on Kane with a ratchet-like sound. Eventually the thing removes itself and Kane recovers. Over dinner with his crewmates, Kane has a fit, during which his chest bursts open with a wet ripping effect. This reveals the alien's offspring, which cries like a monstrous baby before escaping.

Later the now-fully-grown alien kills engineer Brett (Harry Dean Stanton) and then Dallas. Third Officer Ripley (Sigourney Weaver) takes command, a move met with hostility from Ash and chief engineer Parker (Yaphet Kotto). Her plan to corner the alien and blow it into space is interrupted by the revelation that Ash is an android and has been protecting the creature on the orders of the shadowy 'Company' they work for. But he is overpowered and destroyed; Ian Holm's voice was processed using the Doppler effect to make him sound like a dying robot.

While preparing to escape with Ripley and the ship's cat, Jones, Parker and Lambert are attacked by the creature. Lambert's death is off-screen, its full horror conveyed by Veronica Cartwright's screams, which Scott says was a "tough looping session".

As klaxons blare out and the ship begins to hiss as its systems shut down, Ripley and Jones just make it to the shuttle before the Nostromo self-destructs. Scott says there probably wouldn't be sound in the void but he decided to have it for the sequences anyway. The ship is destroyed in three explosions, followed by a firestorm, with Ripley thinking the alien perished on board.

The organic backgrounds, redolent of breathing, suggest that all is not quite right in the shuttle. Ripley discovers the alien asleep in the piping and, dressed in a space suit and singing to herself, she wakes it by opening the steam vents. The creature reacts with a strangulated choking and is blown into space as Ripley opens the airlock.

Time and filmmaking technology have moved on considerably since 1979 and while CGI may improve on the original creature effects, *Prometheus* will have to come up with something special on the audio side to challenge its predecessor/successor.

BIG RED!

"Musicians love the JDX in their IEM's. That's a great compliment when you realize just how demanding these guys are about their sound."

~ Kevin Madigan
FOH - Lucinda Williams.

"Fans don't care about the technology... so long as the bass and guitars make Godzilla weep and hide like a beaten puppy. The Radial JDX works."

~ Doug Short
FOH - Megadeth, Judas Priest, Van Halen, Iron Maiden.

"With the JDX, I get consistent, coherent tone night after night and the guitarists love the sound in their in-ears. It simply rocks!"

~ Eddie Mapp
FOH - Evanescence, Papa Roach, Stone Temple Pilots.

"The JDX is almost too good to be true. The artists hear the sound they are playing and I'm not fighting mic coloration. Plug it in & turn it up."

~ Jon Garber
FOH - Rascal Flatts, Brad Paisley.

"The JDX captures my sound with previously unobtainable control and clarity, offering our soundman a direct injection of sonic rage!"

~ Kerry King
Guitarist - Slayer.

"The JDX is nothing short of revolutionary! I can't believe the clarity and dynamics, yet it still retains the grind of my bass amp. It breathes!"

~ Danny Miranda
Bassist - Queen, Blue Oyster Cult, Meat Loaf.

"The Radial JDX captures the distortion from the bass amp without any loss of low end. And with such a loud band, it also helps eliminate spill."

~ Jon Burton
FOH - The Prodigy

"Folks don't realize how hard it is to make multiple guitar channels live happily together. With a JDX, mic placement is no longer an issue."

~ Bradley Johnson
FOH - Aerosmith, Whitesnake.

"The JDX gives character without the worries of bleed and feedback. I was so surprised how close it sounded to a SM57, I had to double-check."

~ Jim Warren
FOH - Radiohead, Arcade Fire, Nine Inch Nails.

"I was looking to make the bass 'poke' through in my mix so I tried the JDX. It's a great alternative to mic'ing a dirty cab. I've been using it ever since."

~ Russ Giroux
FOH - Chickenfoot.

"The Radial JDX eliminates bleed and potential feedback while producing a familiar sound. The day to day consistency lets me bring the faders up with confidence."

~ Kenneth H. Williams
FOH - Erykah Badu.

The Radial JDX™

"This thing rocks!"

~ Eddie Mapp

For years, engineers have been fighting with guitars to make them sound good. Mic positioning, room acoustics on stage, resonance from the stage floor and bleed from other instruments all play havoc. And this is just the beginning… you still have to try to make an amp sound good with a mic placed right in front of the speaker. To make matters worse, those pesky guitar players are all using in-ear monitors and for the first time, they are actually hearing the sound from the mic. And they're not very happy.

Radial changes the rules with the JDX Reactor™, the world's first direct box designed specifically to capture BOTH the sound of the guitar amp head and the electro-magnetic back impulse from the speaker cabinet. Best of all it works equally well on bass. But don't just take our word for it… read what the pros have to say.

The Radial JDX… the little red box that makes guitars sound BIG!

Radial engineering

...power tools for power players™

www.radialeng.com

1588 Kebet Way, Port Coquitlam BC V3C 5M5 tel: 604-942-1001 email: info@radialeng.com

Copyright 2011 Radial Engineering Ltd. Specifications and appearance subject to change without notice.

Authorized Distributors:

Belgium: FACE-BE +32 3 844 67 87 www.face-be.eu	**Czech Republic:** MUSIC DATA +42 054 557 3465 www.musicdata.cz	**Denmark:** ALFA AUDIO +45 7 027 7300 www.alfaaudio.dk	**Finland:** MSONIC +358 0 10 439 8660 www.msonic.fi	**France:** ARBITER +33 2 40 11 05 05 www.arbiterfrance.com	**Germany:** MEGA AUDIO +49 6721 9 43 36 www.megaaudio.de	**Hungary:** GEM KFT +361 246 3 246 www.gemkft.hu	**Italy:** GROSBY MUSIC +39 71 7211 340 www.grosby.it
Netherlands: TM AUDIO +31 0 30 2414070 www.tmaudio.nl	**Poland:** LAUDA AUDIO +48 058 555 0660 www.lauda-audio.pl	**Russia:** SLAM +7 (095) 933 5333 www.slam.ru	**Spain:** SEESOUND +34 935 443 776 www.seesound.es	**Sweden:** ARNA TRADING +46 08 470 58 10 www.arna.se	**Switzerland:** MOMA AUDIO +41 44 430 90 80 www.mgmaudio.ch	**U.A.E.:** MELODY HOUSE +971 04-3234512 www.melodyhouse.ae	**United Kingdom:** SHURE UK DISTRIBUTION +44 1932 703058 www.shureukdistribution.co.uk

PRO 2
LIVE AUDIO SYSTEM

PRO 2C
LIVE AUDIO SYSTEM

Now... affordable 2 everyone

Digital Goes Midas Goes Compact

- 56 mic/line inputs
- 64 input channels
- 27 sample-synchronous phase-coherent buses
- 6 multi-channel FX Engines
- 28 KT DN370 31-band GEQ's
- 6 POPulation groups
- 8 VCA groups
- 192 MCA groups
- Daylight-viewable full colour TFT display screen
- Midas latency compensation system

© 2011 MUSIC Group IP Ltd. Technical specifications and appearances are subject to change without notice and accuracy is not guaranteed.
MIDAS and KLARK TEKNIK are part of the MUSIC Group (music-group.com).

MIDAS

midasconsoles.com

AUDIO-FOR-VIDEO • BROADCAST • INTERNET AUDIO • LIVE SOUND • MULTIMEDIA • POST PRODUCTION • RECORDING

THE INTERNATIONAL BUYER'S GUIDE

A SPECIAL PROMOTIONAL PUBLICATION FROM THE NEWBAY MEDIA GROUP

LIVE SOUND TECHNOLOGY 2012

PRODUCED BY

AUDIO MEDIA

In association with:

ProAudio Review

prosound news

Directory

This directory lists a selection of manufacturers who are directly relevant to or in some way applicable to the live sound technology market. Apologies if we've missed you out. If this is the case, please contact us on +44 (0) 1223 911639 or at mail@audiomedia.com and we will correct the ommission in the downloadable pdf version of this supplement (available from www.audiomedia.com).

Adam Hall Group
www.adamhall.com
+44 (0) 1702 613 922

Adamson Systems Engineering
www.adamsonsystems.com
+1 905 982 0520

Aevox Audio
www.aevox.be
+32 473 34 38 80

Alto Professional Audio Products
www.altoproaudio.com
+886 4 2233 5858

AKG Acoustics
www.akg.com
+43 1 86654 0

Alcons Audio
www.alconsaudio.com
+ 31 0 229 28 30 90

Alesis
www.alesis.com
+1 401 658 5760

Allen & Heath
www.allen-heath.com
+44 (0) 1326 372 070

AMG Electronics
www.c-ducer.com
+44 (0) 1428 658775

AMT
www.appliedmic.com
+1 908 665 2727

APB DynaSonics
www.apb-dynasonics.com
+1 973 785 1101

Apex
www.apex-audio.be
+32 (0) 11 28 61 91

Aphex Systems
www.aphex.com
+1 818 767 2929

Applied Research & Technology (ART)
www.artproaudio.com
+1 716 436 2720

ASL Intercom
www.asl-inter.com
+31 30 241 1901

Ateis
www.ateis-international.com
+31 (0)10 2088690

Audio Toys, Inc. (ATI)
www.audiotoys.com
+1 301 776 7879

Audioco Systems Oy
www.audico.fi
+358 2 415 5400

Audio Limited
www.audioltd.com
+44 (0) 1494 511 711

Audio-Technica (UK)
www.audio-technica.com
+44 (0) 113 277 1441

Audix
www.audixusa.com
+1 503 682 6933

Avalon Design
www.avalondesign.com
+1 949 492 2000

Avid Technology
www.avid.com
+44 (0) 1753 655 999

Aviom
www.aviom.com
+1 610 738 9005

Avlex
www.avlex.com
+1 816 581 9103

B-52 Professional
www.B-52PRO.com
+1 323 277 4100

Barth Acoustic Systems
www.barth-acoustic.com
49 (0) 7022 50 35 07

BBE Sound
www.bbesound.com
+1 714 897 6766

Behringer
www.behringer.com
+49 2154 9206 0

Beijing 797 Audio
www.797audio.com
+86 10 5978 9246

beyerdynamic
www.beyerdynamic.com
+49 7131 617 0

Blue Microphones
www.bluemic.com
+1 818 879 5200

Bosch Communications Systems
www.boschcommunications.com
+49 (0) 9421 706 307

BSS Audio
www.bssaudio.com
+1 801 566 8800

Buzz Audio Ltd
www.buzzaudio.com
+64 (0)4 472 3084

CAD Professional Microphones
www.cadmics.com
+1 440 349 4900

Cadac Electronics
www.cadac-sound.com
+44 (0) 1582 404 202

Celestion International
www.celestion.com
+44 (0) 797 349 3471

Cerwin-Vega!
www.cerwin-vega.com
+1 954 316 1501

Chameleon Labs
www.chameleonlabs.com
+1 206 264 7602

Chandler Limited
www.chandlerlimited.com
+1 319 885 4200

ClearCom
www.clearcom.com
+44 (0) 1223 815 000

Clockaudio Ltd
www.clockaudio.com
+44 (0) 23 9225 1193

Coda Audio
www.codaaudio.com
+49 (0) 511 866 55 888

Coles Electroacoustics
www.coleselectroacoustics.com
+44 (0) 1992 466 685

Countryman Associates
www.countryman.com
+1 650 364 9988

Crest Audio
www.crestaudio.com
+1 866 812 7378

Crown Audio
www.crownaudio.com
+1 574 294 8000

d&b audiotechnik
www.dbaudio.com

DAS Audio
www.dasaudio.com
+34 96 134 0206

DAV Electronics
www.davelectronics.com
+44 (0) 20 8892 9334

dB Technologies
www.dbtechnologies.com
+49 2203 9253723

dbx Professional Products
www.dbxpro.com
+1 801 568 7660

DiGiCo UK
www.digiconsoles.com
+44 (0) 1372 845 600

Digigram
www.digigram.com
+33 (0)4 76 52 47 47

DPA Microphones
www.dpamicrophones.com
+45 4814 2828

Duran Audio
www.duran-audio.com
+31 418 515 583

Dynacord
www.dynacord.com
+49 (0) 9421 706 0

Earthworks
www.earthworksaudio.com
+1 603 654 6427

Eastern Acoustic Works
www.eaw.com
+1 508 234 6158

Electro-Voice
www.electrovoice.com
+1 866 782 8346

Elysia
www.elysia.com
+49 (0) 2157 12 60 40

EM Acoustics
www.emacoustics.co.uk
+44 (0) 1483 266 520

Empirical Labs
www.empiricallabs.com

ESI Audiotechnik
www.esi-pro.com
+49 (0) 7152 398 880

Eventide
www.eventide.com
+1 201 641 1200

EVI Audio
www.boschcommunications.com
+49 (0) 89 6290 0

Extron Electronics Europe
www.extron.com
+31 33 453 4040

Faital S.p.A
www.faital.it
+39 02 5277031

FBT Electronic
www.fbt.it
+39 071 750591

Focusrite Audio Engineering
www.focusrite.com
+44 (0) 1494 462 246

Funktion-One
www.funktion-one.com
+44 (0) 1306 712 820

Furman Sound
www.furmansound.com
+1 707 763 1010

George Massenburg Labs
www.gmlinc.com
+1 615 790 1016

Grace Design
www.gracedesign.com
+1 303 443 7454

Groove Tubes
www.groovetubes.com
+44 (0) 1795 538877

Hear Technologies
www.heartechnologies.com
+1 256 922 1200

Heil Sound
www.heilsound.com
+1 618 257 3000

HK Audio
www.hkaudio.com
+49 (0) 68 51 905 0

HM Electronics (HME)
www.hme.com
+1 858 535 6060

InnovaSON
www.innovason.com
+33 (0) 297 24 34 34

Inter-M Corp.
www.inter-m.com
+82 2 2289 8141 8

JBL Professional
www.jblpro.com
+1 818 894 8850

JoeCo
www.joeco.co.uk
+44 (0) 1223 911 000

Joemeek
www.joemeek.com
+1 877 563 6335

Josephson Engineering
www.josephson.com
+1 831 420 0888

JTS
www.jts.com.tw
+886 4 24938803

Klark Teknik
www.klarkteknik.com
+44 (0) 1562 741515

Kling & Freitag
www.kling-freitag.de
+49 (0) 511 96 99 70

KV2 Audio Europe
www.kv2audio.com
+44 (0) 1423 816 868

L-Acoustics
www.l-acoustics.com
+33 (0) 1 69 63 69 63

LA Audio
www.laaudio.co.uk
+44 (0) 1256 381 944

Lab.gruppen
www.labgruppen.com
+46 300 56 28 00

Lauten Audio
www.lautenaudio.com
+1 877 721 7018

Lavry Engineering
www.lavryengineering.com
+1 360 598 9757

Lawo
www.lawo.de
+49 7222 1002 0

LD Systems
www.ld-systems.com

Lectrosonics
www.lectrosonics.com
+1 505 892 4501

Legendary Audio
www.legendaryaudio.com
+1 512 289 3428

Lexicon Pro
www.lexiconpro.com
+1 801 568 7567

Listen Technologies
www.listentech.com
+49 911 955 159 0

Little Labs
www.littlelabs.com

Mackie
www.mackie.com
+1 425 892 6500

Manley Laboratories
www.manleylabs.com
+1 909 627 4256

Martin Audio
www.martin-audio.com
+44 (0) 1494 535 312

MC2 Audio
www.mc2-audio.co.uk
+44 (0) 1404 44633

McDSP
www.mcdsp.com
+1 650 318 0005

Mercenary Audio
www.mercenary.com
+1 508 543 0069

Merging Technologies
www.merging.com
+41 (0) 21 946 0444

Meyer Sound Laboratories
www.meyersound.com
+1 510 486 1166

Micron (Audio Technology)
www.micronwireless.co.uk
+44 (0) 208 341 3500

Midas
www.midasconsoles.com
+44 (0) 1562 741 515

Millennia Music & Media Systems
www.mil-media.com
+1 530 647 0750

MindPrint
www.mindprint.com
+44 20 8148 0778

Mipro Electronics
www.mipro.com.tw
+886 5 238 0809

Nady Systems
www.nady.com
+1 510 652 2411

Neumann
www.neumann.com
+49 30 41 77 24 0

Neutrik
www.neutrik.com
+423 237 2424

Nexo
www.nexo-sa.com
+33 (0) 1 4863 1914

Out Board
www.outboard.co.uk
+44 (0) 1223 208183

Outline s.n.c.
www.outline.it
+39 030 35 81 341

Peavey Electronics
www.peavey-eu.com
+44 (0) 1536 461 234

Phonic
www.phonic.com

PMI Audio
www.pmiaudio.com
+39 055 735 0230

Powersoft
www.powersoft-audio.com
+1 310 323 9050

Presonus Audio Electronics
www.presonus.com
+1 225 216 7887

QSC Audio
www.qscaudio.com
+1 (714) 754-6175

Radial Engineering
www.radialeng.com
+1 604 942 1001

Rane Corporation
www.rane.com
+1 425 355 6000

RCF
www.rcfaudio.com
+39 0522 274 411

RDL Europe
www.radiodesignlabs.com
(31) 20-6238 983

Renkus-Heinz
www.renkus-heinz.com
+1 949 558 9997

RIEDEL Communications
www.riedel.net
+49 (0) 202 292 90

RME
www.rme-audio.com
+49 08133 91 810

Røde Microphones
www.rode.com.au
+61 2 9648 5855

Roland Systems Group
www.rolandsystemsgroup.co.uk
+44 (0) 1792 702 701

RTS
www.telex.com
+1 800 392 3497

SADiE
www.sadie.com
+44 (0) 1353 648 888

Salzbrenner Stagetec Media Group
www.stagetec.com
+49 30 639 902 0

Samson Group Technologies
www.samsontech.com
+1 631 784 2200

Schoeps Mikrofone
www.schoeps.de
+49 (0)721 943 20 0

SD Systems
www.sdsystems.com
+ 31 20 692 641

sE Electronics
www.seelectronics.com
+44 (0) 1582 470 260

Sennheiser
www.sennheiser.com
+49 (5130) 600 0

Shure
www.shure.com
+1 847 600 2000

SLS Loudspeakers
www.slsloudspeakers.com
+1 417 883 4549

Sommer Cable
www.sommercable.com
+49 (0)7082 491 330

Sonifex
www.sonifex.co.uk
+44 (0) 1933 650 700

Sonnox
www.sonnoxplugins.com
+44 (0) 1865 887505

Soundcraft
www.soundcraft.com
+44 (0) 1707 665 000

Soundking
www.soundking.com
+86 574 8823 5195

Sound Projects
www.soundprojects.com
+31 (0) 36 539 45 70

Speck Electronics
www.speck.com
+1 760 723 4281

SPL Electronics
www.soundperformancelab.com
+49 2163 98340

Stage Accompany
www.stageaccompany.com
+31 229 28 29 30

Stagetec
www.stagetec.com
+49 30 639 9020

Studer Professional Audio
www.studer.ch
+41 44 870 75 11

Studio Projects
www.studioprojectsusa.com
+1 310 323 9050

Studio Technologies
www.studio-tech.com
+1 847 676 9177

Summit Audio
www.summitaudio.com
+1 775 782 8838

Tannoy
www.tannoy.com
+44 (0) 1236 420 199

TAPCO
www.tapcoworld.com
+1 425 892 6511

TC Electronic
www.tcelectronic.com
+45 8742 7000

Telex Communications
www.telex.com
+1 877 863 4166

TOA Electronics Europe
www.toa.de
+49 (0)40 25 17 190

Trantec
www.trantec.co.uk
+44 (0) 20 8330 3111

Turbosound
www.turbosound.com
+44 (0) 1403 711 447

Universal Audio
www.uaudio.com
+1 831 440 1176

Waves Audio
www.waves.com
+1 865 909 9200

XTA Electronics
www.xta.co.uk
+44 (0) 1299 879 977

Yamaha Commerical Audio
www.yamahacommercialaudio.com
+44 (0) 1908 366 700

contents

2 Directory

4 Moving With The Times

6 Avid

7 Crown

10 JoeCo

12 Sennheiser

14 Soundcraft

14 Waves

Welcome

Welcome to *Live Sound Technology 2012*, an overview of the live sound product market for the sound reinforcement professional.

This live sound supplement from *Audio Media* magazine is an all-new exploration of current thinking and hot products in the performance audio and sound reinforcement industries. This area has some very specific needs, from bullet-proof reliability and redundancy, to maximum emphasis on ergonomics and immediate access to functionality. An audience makes all the difference – you can't go back and try again.

Running parallel with these core requirements are the stunning advances in sound quality that have been made in a relatively short time. The consumer is demanding more and more from live performance, and the manufacturers and operators are delivering. The new generation of digital consoles, plug-in processing, progress in PA and line array, sophisticated audio and comms networking tools, and much more are all contributing to rising standards in sound reinforcement.

We hope this guide will serve as a good foundation to your 2012 live sound equipment specification, whether you're creating a shopping list for your theatre, a rider for a forthcoming tour, or an investment plan for your rental operation. To help set the scene, we've included an independent article on what's hot in the live sound industry, then we present product expos from six manufacturers, all with high-end technology solutions specifically for sound reinforcement. Lastly, we present a directory of selected manufacturers directly relevant to the live sound industry.

This promotional guide has been produced by *Audio Media* magazine. The publication concerns itself with the business of audio production on tour, on location, and in the studio – for professional creatives, operators, technicians, and engineers everywhere.

The Audio Media Team.

AUDIO MEDIA
www.audiomedia.com
(UK) Tel: +44 (0) 1354 669960 - Fax: +44 (0) 1354 669965

Editor
Paul Mac
p.mac@audiomedia.com

Editorial Manager (Europe)
Lanna Marshall
l.marshall@audiomedia.com

Sales
Graham Kirk
g.kirk@audiomedia.com

Design & Production Manager
John-Paul Shirreffs
jp.shirreffs@audiomedia.com

NewBay Media
www.nbmedia.com

The contents of this publication are subject to worldwide copyright protection and reproduction in whole or in part, whether mechanical or electronic, is expressly forbidden without the prior written consent of the Publishers. Great care is taken to ensure accuracy in the preparation of this publication but neither NewBay Media nor the Editor can be held responsible for its contents or any omissions. The views expressed are those of the contributors and not necessarily those of the Publishers or Editor. The Publishers accept no responsibility for the return of unsolicited manuscripts, photographs, or artwork.
© 2011 NewBay Media. All rights reserved.

Moving With The Times

Recent months have seen several major manufacturers launch brand new loudspeaker systems and consoles, each claiming to boast the hottest technological twist, so to speak, which has left some rental companies in a bit of a dilemma about where next to invest their hard earned cash. AUDIO MEDIA finds out what technologies in particular are raising the proverbial eyebrows, and what the short- to medium-term plans are going forward…

Providing sound reinforcement is 'arguably the most important part of the pie' according to SSE/Canegreen's Yan Stile. At the same time, however, Stile acknowledges that this particular piece of pie is continuing to shrink as video continues to grow, and LED screens are becoming more and more prominent in live shows.

"These [LED] screens give so much more illumination, and add something special to a live gig," he explains. "Personally, I love them, and I love lights in general; we have actually just set up a lighting division in Nantes, which is sure to open new doors for us. It's been an important step."

Stile makes an interesting point, and indeed the new facility, part of SSE's French affiliate, Melpomen, is now trading; Melpomen has also recently moved into a new headquarters, which is significantly bigger in area than its previous home – "not dissimilar to the size of [the SSE/Canegreen HQ in] Redditch, in fact," Stile says.

The company has traditionally been big on L-Acoustics boxes, and evidently, this hasn't changed, though Stile says it's absolutely crucial to keep a tab on what the rest of the manufacturers are doing, and sees the new Nexo STM modular system as 'one to watch'.

"I've never personally been someone that gets particularly enamoured about kit, but I really am interested in this new Nexo system," he admits. "We won't get to try it over here in the UK, unfortunately, but we will at Melpomen; I have always been interested in the utilisation of equipment, and a one box solution is certainly of interest to me – I'll be keen to see how that develops."

Stile says the company will continue to spend plenty of money on L-Acoustics products, as it provides a massive range of tools that are commercially accepted throughout the industry. It is also a case of remaining customer-driven, he explains.

"We are ultimately led by what the customers want, and it's an incredibly popular brand," he says, "KARA, KUDO, KIVA; in fact, anything with a 'K' [laughs]; their flagship K1 is absolutely flying out the door at the moment."

All For Sale

What singles out SSE/Canegreen from the other rental companies, perhaps, is that it also has a major sales department. Because of this, teems of consoles are being purchased all the time.

"Because we sell the kit as well as rent it, we need to stock absolutely everything; we just invested in a bunch of the new Yamaha consoles, for example, and we've noticed that the smaller Midas [Pro2] consoles are now doing extremely well. It took a while for the XL8 to take off – in fact, it never did, really, did it? But we currently have a Midas Pro6 out with Robbie McGrath (FOH Stone Roses), and there's a Pro9 out with Blink 182; to be honest, there are so many jobs out at the minute, I can't remember what they all are!"

An interesting observation, given that 18 months ago SSE/Canegreen was striving to attain more touring work, in a bid to get away from being tagged as 'that festival sound company'. This can't be doing them any harm at all, then?

"Certainly not; in fact, from a touring perspective, we're getting more than our fair share – this year has been busy as hell," Stile confirms. "Also, so much gear is being sucked into the Olympics, so there will be shortfalls, which means everyone in the industry will benefit to some degree; and I'm pleased – they all have mortgages and mouths to feed too, after all."

Spectral Scales

At the other end of the rental company spectrum, one could argue, is North Wales-based CS Audio, run by Paul Hatt. Most of the company's workload comes in the way of renting out digital consoles, of which CS Audio has plenty: a mainly Soundcraft-based inventory (with the exception of a Yamaha M7CL, as it's 'on so many riders', according to Hatt), the company has bought heavily into Soundcraft's Vi range, acquiring Vi4s and Vi1s, and also has a stock of the manufacturer's Si Compact consoles.

In terms of PA systems, CS Audio currently uses KV2 Audio VHD and EX boxes, though in the next 12 months is looking to invest in a major line array, to help expand the business and diversify into other areas; the problem is, Hatt says, 'there are just so many to choose from at the moment'.

"I find that the [KV2 Audio] VHD is a really useful tool as it can cater for a large amount of people and it takes up a relatively small footprint; it enables us to do anything from theatre shows to arenas to big outdoor events, and it also flies very well," he explains. "As we're a growing company, however, we do need to take it to the next level, and a small- to medium-format line array is most certainly the answer. For me, it would need to be flexible, and certainly rider-led – we've suffered before in that area, having to rent in kit that we don't own, and that just ends up being costly."

Although Hatt has a couple of systems in mind, he has made no firm commitment as yet, and won't plan on shopping seriously for his new line array until the autumn time. One of the possibilities might be some form of cardioid sub bass array, he says, which would benefit his live setup in a number of ways.

"I think the cardioid bass array is becoming a really big thing in the live music industry," he states. "It is not only a very helpful tool in terms of addressing unwanted low end frequencies behind the stack, but it also goes some way to addressing the environmental noise issues that we rental companies are now facing more and more of. It would be great

if we could incorporate something like this into our new system."

Investing In The Future

Adlib Audio's Dave Kay says the company's short-term focus in terms of investing in kit is to increase the usage and flexibility of its current systems by adding more of the same stock to its inventory.

"I don't think there's anything out there yet that's the new 'need to have', to be absolutely honest," he says, "so we have invested in more [L-Acoustics] K1, SB28, more Soundcraft Vi6 and Vi1 consoles, Yamaha PM5Ds, more Avid Profile systems, lots of Lake DSP, plus racks of lab.gruppen amplifiers for our monitor systems, and a whole load of more of our new Adlib MP4 monitor wedges; but all of this was mapped out early in the spring."

Kay says it's already now too late in the year to make any major PA system changes, as most of the brand new systems are still in pilot phase, being tried out by key users; to get that involved in any touring projects would have required getting hold of the kit by May.

"In the current climate, it's really all about maximising what you've got – making your inventory more flexible; more of the same makes more sense than investing in a brand new speaker system at the moment, I think, because the cost in the long term is far greater than you might initially see as the up front price," he continues. "Saying that, we don't want to close the door on that part of the market; being an existing VerTec partner, we'd love to upgrade to the new JBL VTX system, for example, but the problem is, when you're buying a speaker system nowadays it's much more expensive, because it's a complete package. On one hand, that's a great thing, as it's the same everywhere you go in the world, but it's also a lot of outlay to start with, just to get yourself a basic system.

"I think there is currently a lot of competition in the low-end digital console market," Kay adds. "Look at the Midas Pro2, and Soundcraft's re-pricing of its low-end consoles, for example; but in terms of the high-end, I don't see much jumping out at me at all."

Adlib has also given a lot of thought to its touring IT equipment and computer systems, all of which have recently received a major revamp.

"We've now got new motion computing tablets from 'Rugged Mobile Systems', so all of the kit that goes out on the road is controllable via these new tablets; it's all part of overhauling what we've got in our current lifecycle, turning over our stock and keeping it fresh as opposed to changing direction," he explains. "To refresh the control side of the packages for the summer season, we've also invested in a lot of Lake DSP gear – LM44s and LM26s."

And protocol is still very much an industry buzz word, it seems; Kay says the conversation of digital returns is commonplace: who's going down the Dante route? Is it Optocore or RockNet? Will AVB ever really get going?

"When you run loads of kit that doesn't have the same standard, there's no commonality between all the different brands, which makes that part of the investment a bit difficult," he concludes.

So as far as investing in new technologies, rental companies across the board are all looking, but not necessarily committing as yet – though that's likely to change. In terms of genuinely exciting products, the PA buzz (forgive the pun) which was created at this year's Prolight+Sound is certainly still lingering; a little further down the line then, maybe, when some of the more interesting of these new systems such as Nexo's STM and JBL's VTX have proven their worth in the field, that might be when the acquisitions take place, because as far as consoles go, the lower end of the market is currently where most of the action is taking place. And SSE/Canegreen's new lighting division is a particularly interesting development; Europe's major rental houses have been providing a one-stop-shop solution for a while now, so could this be the first step towards making that happen in the UK? I guess we'll just have to wait and see…

www.sseaudiogroup.com
www.adlibsolutions.co.uk
www.csonlineaudio.com

A Compact Console Expands Its Reach

Avid VENUE live sound systems are the top choice of professionals for good reason – they deliver studio-quality sound, reliability, and easy Pro Tools integration in streamlined designs. With the new VENUE SC48 Remote System, remote I/O versatility takes centre stage.

Studio-quality sound goes the distance with the VENUE SC48 Remote System featuring the SC48 console and up to two Stage 48 remote boxes.

The size of any given club, theatre, house of worship, or other performance hall doesn't necessarily correlate with the size of the FOH space. When faced with tight quarters, having a small system that delivers big on sound and opportunity is key. Avid has had great success with VENUE SC48 – a compact digital console that fits anywhere, combining all I/O, DSP, a Pro Tools® interface, and tactile control in one. And it delivers the hallmarks that put VENUE systems on top, including award-winning sound clarity, direct plug-in support, proven reliability, and ease of use.

But if your FOH position is a ways from the stage, or in awkward proximity to it, figuring out creative – and safe – ways to run bulky multicore analogue snake cables might not be ideal.

Enter the VENUE SC48 Remote System, which pairs a specially configured SC48 with the new VENUE Stage 48 remote box, enabling you to place the I/O closer to sources for better audio fidelity. What's more, the system features fully redundant, auto-switching Ethernet AVB snake connections. This future-forward, low-latency open technology enables the system to transmit high-fidelity audio – with the utmost reliability – over lightweight, inexpensive 350 MHz Cat5e cable at distances up to 100 metres, without noise or signal degradation.

Build Complex Mixes – Without the Complexity

The SC48 Remote System features powerful, easy-to-use VENUE 3 software running under the hood, enabling you to control all routing, mixing, snapshots, plug-ins, and recording functions in one place quickly, so you can focus on your mix – not the console.

The surface features 26 faders – 16 input, one FlexChannel, eight master, and one Mains – with bankable layers and VCA and Group Spill to help you pull up what you need fast. Create large, detailed mixes with up to 80 mix channels (64 input processing, plus eight stereo effects returns). Re-create the sounds of signature recordings, with 40 slots to hold your favourite plug-ins – the same ones used in countless recording studios worldwide – from vintage tube compressors and EQs to ballsy amp emulators and pitch correctors. And with 35 total busses – 24 discrete, plus eight matrix and LCR – you can easily handle large monitor mixes.

Avid offers a range of VENUE systems, including VENUE Profile (pictured) to meet a variety of needs and budgets.

Want to record shows or perform Virtual Soundchecks? Simply connect a laptop to the built-in Pro Tools FireWire interface (Pro Tools 10 software included) and you're ready to record/play back up to 32 audio tracks – in addition to your 80 mix channels.

The Ins and Outs You Need

Forget compromising connectivity for console compactness; the SC48 Remote System packs in plenty of I/O. The standard configuration provides 48 inputs and 16 outputs (expandable to 32), split between the console and remote box:

- SC48 – 16 recallable analogue mic/line inputs, plus ancillary I/O (2 x 2 analogue/2 x 2 AES/EBU)
- Stage 48 – 32 recallable analogue mic/line inputs, 16 analogue line outputs

Add analogue, digital, or A-Net connectivity with VENUE I/O option cards. While the system has a 48x32 I/O specification, you can actually supersize it up to 66 inputs and 50 outputs total. Just install the VENUE IO16 Option Card into SC48 (adding 8x8 analogue I/O and 8x8 digital I/O) and add a second Stage 48, which also provides more distributed I/O versatility, so you can place one box on stage and the other closer to wireless sources or at FOH.

The VENUE Family

In addition to the SC48 and SC48 Remote System, Avid offers three larger VENUE systems to meet your needs and budget. From the highly scalable VENUE D-Show® System to the expandable yet more compact VENUE Profile and Mix Rack Systems, VENUE greatly streamlines your workflow to help you achieve the sound you want – without the headaches or hassles.

avid.com

Avid
www.avid.com
USA headquarters
75 Network Drive
Burlington, MA 01803
t +1 978 640 6789

UK office
Pinewood Studios,
West Side Complex,
Pinewood Road,
Iver Heath, Bucks SL0 0NH
t +44 175 365 5999

A New Breed of Amplifier

The making of Crown's new flagship I-Tech 4x3500HD DriveCore™ multi-channel power amplifier.

A growing need exists for multi-channel power amplifiers. Crown saw the need to re-think the entire category with its flexible, technologically advanced I-Tech HD Series 4x3500HD DriveCore Series four-channel power amplifier.

Brian Pickowitz – Market Manager, Tour Sound for Crown Audio

What made Crown decide to develop its first multi-channel amplifier?

We saw that the four-channel DSP-enabled amplifier was an emerging category, but tour sound professionals had expressed concerns that the amps on the market were lacking features they wanted. In particular, amplifiers didn't have enough inputs and outputs or a true 4 x 4 configuration, where any of four inputs can be routed to any of the four outputs singly or in combination. We knew we had to design an amplifier that addressed these concerns.

What are some of the engineering attributes that make the I-Tech 4x3500HD different?

Crown's DriveCore circuit topology is unique among power amplifiers, and we wanted to incorporate it into the I-Tech 4x3500HD along with a number of proprietary HARMAN DSP technologies. The DriveCore amplifier chip is the size of a postage stamp yet combines the amplifier driver stage, power output stage and additional audio-signal functions, and delivers 3,500 watts per channel burst into four or two ohms! It's extremely efficient, dramatically reduces size and power-consumption requirements, and sounds great.

You have to look at the amplifier as part of a system. The I-Tech 4x3500HD offers more flexibility than any other amplifier out there. It's compatible with HARMAN's HiQnet™ System Architect™ 2.0 control functionality, JBL® HiQnet Performance Manager system set-up software, and Version 5 DSP preset support for JBL's new VTX Series V25 plus VERTEC® Series line array loudspeakers. It offers tremendous sound tailoring and EQ capabilities, and Crown's exclusive linear phase FIR and IIR filters provide optimised loudspeaker crossover points with improved mid-range clarity and off-axis loudspeaker response.

Sounds complicated. How hard is it to get this amp up and running?

Though sophisticated, the I-Tech 4x3500HD is completely user friendly. Its front panel touchscreen display provides easy access to key functions with colour-coded visuals that change colours according to the channel selected. The I-Tech 4x3500HD accommodates analogue, AES digital, CobraNet® and VDrive inputs, and offers binding post and SpeakON output connectors.

Using Performance Manager and the Version 5 presets, the I-Tech 4x3500 can be set up so that a front of house engineer will hear the same sound – assuming the same loudspeaker configuration – when he or she goes from Los Angeles to London to Johannesburg.

An Inside Look at the I-Tech 4x3500HD

The Crown I-Tech 4x3500HD incorporates Crown's sixth-generation Class I engine with DriveCore technology to deliver 1,900 watts per channel into 8Ω, 2,000 wpc into 4Ω, and 4,000 wpc into 4Ω bridged with all channels driven at full bandwidth. Its energy-efficient operation conforms to HARMAN's GreenEdge™ environmental initiative.

The 2U rack space high I-Tech 4x3500HD offers four analogue inputs, four AES3 digital inputs, and four AES inputs over VDrive and the ability to select four CobraNet inputs. The amplifier includes SpeakON and banana plug speaker connectors and a Neutrik® PowerCON AC input connector. The 4.3-inch front-panel LCD touchscreen provides amplifier monitoring and colour-keyed visual access to key functions.

A proprietary BSS Audio® OmniDriveHD DSP processing engine employs 32-bit/192kHz A/D and D/A converters for superb sonic clarity and the ability to precisely tailor the amplifier's audio output. Crown's linear phase FIR and IIR filters provide optimised crossover points for better loudspeaker performance, and JBL VERTEC Version 5 DSP preset tunings improve VERTEC loudspeakers' sound quality and horizontal coverage. The I-Tech 4x3500HD is compatible with the Powered by Crown iPad®/iPhone® application.

The I-Tech 4x3500HD incorporates Crown LevelMax™ limiter technology that combines the operation of the amplifier's Peak, Thermal and RMS limiters for more effective protection; a front-panel USB port that enables users to load preset amplifier settings, device files or firmware updates, and many additional features.

Crown Audio

w www.crownaudio.com

Product Comparison

	SD11i	SD9 Supercharged	SD8 Overdrive II
Max no of Input Processing Channels	32 Flexi*	48 Flexi*	60 Flexi*
Maximum Buss Count	39***	47***	67***
Max aux / sub-group busses	12 Flexi* (full processing**)	16 Flexi* (full processing**)	24 Flexi* (full processi
Matrix (in addition to aux / sub - group)	8 x 8 (full processing**)	12 x 8 (full processing**)	16 x 12 (full processin
Solo busses	2	2	2
Max no of inputs - Non optic consoles	130	180	N/A
Max no of inputs - 1 console on optic loop	N/A	N/A	576
Max no inputs - 2 consoles on optic loop	N/A	N/A	632
Local I/O spec	16x mic/line inputs, 8x line outputs, 2x AES/EBU I/O (mono streams)	8x mic/line, 8x line outputs , 4x AES/EBU I/O (mono streams)	8x mic/line, 8x line ou (mono streams)
Max no of outputs	122	180	576
Max no. of faders	12	24	37
Screen	1x 15" touch	1x 15" touch	1 x 15" touch
Ext. overview screen	Yes	Yes	Yes
I/O expandability	Yes	Yes	Yes
Insert points / channel	1	1	2
On Board FX	6	8	12
Graphic Eqs (32-Band)	12	16	24
Dynamic EQ	6	8	10
Buss 8-band Parametric EQ	No (4 band only)	No (4 band only)	No (4 band only)
Multiband Compression	6	8	10
DiGiTubes	6	8	10
Multi-channels	Yes	Yes	Yes
VCA - style control groups	8	8	12
Set Spill	Yes	Yes	Yes
Mute Groups (part of control groups)	8	8	12
Reorder Busses	Yes	Yes	Yes
Multi-operator	By remote only	By remote only	By remote only
Surround	No	No	No
MADI connectivity	1x Port	1x Port	2x Redundant ports
Optics	No	No	Yes
Snapshot Offline	Yes	Yes	Yes
Snapshot Auto-Update	No	No	Yes
Sampling rates	48 kHz	48 kHz	48 / 96 kHz
Signal processing	FPGA, up to 40-bit floating-point	FPGA, up to 40-bit floating-point	FPGA, up to 40-bit flo
Audio processing and OS location	Surface	Surface	Surface
Redundant Processing and Computer	No	No	No
Redundant PSU's	Yes -by remote PSU option only	Yes - Option	Yes
Stage Rack spec	D-Rack - 32/8 I/O (expandable to 16 O)	D-Rack - 32/8 I/O (expandable to 16 O)	Up to 56 in / 56 out /
Max no of Racks	2 (with Little Red Box)	3 (With Little Red Box)	16
Rack Interface	MADI / RJ45 CAT 5	MADI / RJ45 CAT 5	MADI / Optocore (opt
Connector type for racks	BNC / CAT 5	BNC / CAT 5	BNC / HMA optics / ST
Rack sharing FOH/MON	Gain Tracking	Gain Tracking	Gain Tracking
Offline Software	Yes	Yes	Yes
Recording	Virtual Soundcheck up to 56 channels	Virtual Soundcheck up to 56 channels	Virtual Soundcheck u
Dimensions (mm) and Weight (kg)	483(w) x 577(d) x 232(h) - 24Kgs	878(w) x 785(d) x 262(h) - 36Kgs	1347(w) x 811(d)
Dimensions (inches) and Weights (lbs)	19.02(w) x 22.72(d) x 9.13(h) - 53lbs	34.57(w) x 30.90(d) x 10.31(h) - 80lbs	53.03(w) x 31.93(d)

* Flexi - Configurable Mono or Stereo without the loss of any resources
** Full Processing - Includes 4 or 8 Band EQ, HP/LP Filters @24dB Per Octave, Compressor and gate.
*** Max Buss Count is calculated as Aux / Group Buss + Master Buss (LCR or 5.1 depending on product) + Matrix Buss + 2 Solo Busses (up to 5.1 depending on product)

	SD10 Nitrous	SD5	SD7 MACH 3
	96 channels, 12 Flexi*	124	253
	71***	98***	160***
g**)	48 Flexi* (full processing**)	56 (full processing**)	128 (full processing**) (inc 2x solo buss)
**)	16 x 16 (full processing**)	24 x 24 (full processing**)	32 x 32 (full processing**)
	2	2	2
	N/A	N/A	N/A
	576	632	696
	632	688	752
uts, 8x AES/EBU I/O	8x mic/line, 8x line outputs, 8x AES/EBU I/O (mono streams)	8x mic/line, 8x line outputs, 8x AES/EBU I/O (mono streams)	12x mic/line, 12x line outputs, 12x AES/EBU I/O (mono streams)
	576	632	696
	37	37	52 (plus 48 if used with 2 x EX007)
	1x 15" touch	3 x 15" touch	3 x 15" touch
	Yes	Yes	Yes
	Yes	Yes	Yes
	2	2	2
	16	24	48
	24	32	32
	16	24	256
	Yes	Yes	Yes
	16	24	256
	16	210	256
	Yes	Yes	Yes
	24	24	36
	Yes	Yes	Yes
	24	24	36
	Yes	Yes	Yes
	By remote only	Yes	Yes
	No	Yes	Yes
	2x Redundant ports	3x Redundant ports	4x Redundant ports
	Yes	Yes	Yes
	Yes	Yes	Yes
	Yes	Yes	Yes
	48 / 96 kHz	48 / 96 kHz	48 / 96 kHz
ing-point	FPGA, up to 40-bit floating-point	FPGA, up to 40-bit floating-point	FPGA, up to 40-bit floating-point
	Surface	Surface	Surface
	No	No	Standard
	Yes	Yes	Yes
ADI split x2 (@ 48kHz)	Up to 56 in / 56 out / MADI split x2 (@ 48kHz)	Up to 56 in / 56 out / MADI split x2 (@ 48kHz)	Up to 56 in / 56 out / MADI split x2 (@ 48kHz)
	16	17. On 2 loops = 31	18. On 2 loops = 32
n)	MADI / Optocore (option)	MADI / Optocore	MADI / Optocore
Opticon (option)	BNC / HMA optics / ST / Opticon (option)	BNC / HMA optics / ST / Opticon	BNC / HMA optics / ST / Opticon
	Gain Tracking	Gain Tracking	Gain Tracking
	Yes	Yes	Yes
to 112 channels	Virtual Soundcheck up to 112 channels	Virtual Soundcheck up to 168 channels	Virtual Soundcheck up to 224 channels
x 254(h) - 71.3Kgs	1398(w) x 818(d) x 285(h) - 60Kgs	1465(w) x 850(d) x 753(h) - 116Kgs	1496(w) x 875(d) x 503(h) - 107Kgs
x 10(h) - 157lbs	55.04(w) x 32.2(d) x 11.22(h) - 132lbs	57.68(w) x 33.46(d) x 29.65(h) - 256lbs	58.9(w) x 34.45(d) x 19.8(h) 236lbs

DiGiCo

Instant Replay – JoeCo BLACKBOX Player

During 2010, advancements in BlackBox technology saw JoeCo's original concept of computer-free, multi-channel live audio capture develop into an innovative new option for dedicated multi-channel playback. Today, the **BlackBox Player** appears regularly (on and off stage) in live performances worldwide.

BlackBox technology has revolutionised the way multi-channel audio is handled in the live performance environment. Avoiding risks associated with using general-purpose computers with generic operating systems at live shows, the dedicated technology enables multiple tracks of audio to be recorded/replayed directly via a compact 1U interface and external USB2 drive.

The BLACKBOX **Family**
The Player has three recorder siblings:

BBR64-MADI Recorder
64-channel audio capture/ playback

BBR1 Recorder
24-channel audio capture/ playback (analogue and digital options)

BBR64-DANTE Recorder
64-channel audio capture/ playback over Dante network

Great if you're recording, but what if your main focus is audio playback? Today, many live shows depend on some studio-generated backing tracks. So do you rely on a stereo mix? What if it doesn't sound right in the venue, or the running order suddenly changes? Should you just take all the source audio on a laptop and hope for the best? It's to avoid dilemmas like these that the BlackBox Player has been specially developed.

How the BlackBox Player Works

The BlackBox Player is designed to simultaneously replay up to 24 channels of high quality audio. Playback material can be created using any workstation capable of producing mono BWAV format files. Audio is stored on an external USB2 hard drive or USB Flash drive. A simple file naming convention ensures sample accurate synchronous playback of each audio file through its respective output. Your show setlist is configured as a simple XML format playlist. Using the Player's menu options, select your playlist and hit 'Play'. Within each list, the next song automatically pre-loads, though changes can be made on the fly.

The Player in Action

At the venue, the BlackBox Player can be connected to the FOH console as appropriate (both analogue and digital I/O options are available), enabling playback channels to be separately balanced, EQ'd, and processed alongside other live audio.

At this point, you (or your engineer) have full control over each channel and can compensate for venue acoustics, or audience generated noise during the performance.

For the performers, foldback mixes incorporating Player audio (such as multiple separate click tracks) can be created using standard console facilities.
A separate mix can also be sent to the Musical Director for example, via the Player's headphone output.

Operating the Player isn't the exclusive domain of the FOH engineer. Units are often found beside band members and monitor desks, so various triggering options are available, via the front panel, QWERTY keyboard, MIDI, 9-pin or a footswitch, to ensure total control of the device during the show. MIDI control also enables additional funtionality such as preloading specific songs and show control for transmitting cue information. To synchronise audio with click tracks, or visual media, the Player can be configured to accept an incoming source of timecode and audio clock. All standard timecode frame rates are supported.

Importantly, the BlackBox Player contains a number of safety features, including a built-in automated fail-over mechanism, ensuring that it meets the all-important "show must go on" criteria when there's no second chance.

Playlist and song cues.

BlackBox Player Applications

As well as replaying backing tracks and multiple surround stems for live shows, the BlackBox Player features in theatre productions, themed entertainment, and permanent installations requiring playback facilities such as museums, galleries, and worship venues. It also has broadcast applications for timed multi-language or multi-station play-out.

The BlackBox Player is essentially a dedicated playback option based on standard BlackBox technology, so when purchasing a Player you also have access to the full functionality of the BlackBox Recorder. The Player is also available as a separate software add-on for existing BlackBox Recorder owners.

JoeCo Limited
135 Histon Road,
Cottenham,
Cambridge CB24 8UQ, UK
w www.joeco.co.uk
t +44 (0) 1223 911 000

For details of your local distributor, please visit the Sales area at: www.joeco.co.uk

PRO SERIES
LIVE AUDIO SYSTEMS

For those who refuse to compromise

- Midas sound – often imitated, never equalled
- Sample-synchronous audio quality – all audio time and phase coherent
- Daylight-viewable display screens
- 192 channel bi-directional snake included
- Up to 288 inputs and 294 outputs patched and routed on a scene-by-scene basis
- IEM-safe low and deterministic latency
- Remote, modular processing engine
- "Area B" for those must-have-all-the-time inputs
- Flexible and Expandable

MIDAS
DESIGNED FOR A PURE PERFORMANCE
www.midasconsoles.com

Sennheiser – A Passion for Sound

From big live shows to intimate club gigs, Sennheiser microphones and monitoring systems ensure optimum live sound for every type of venue and event.

Passion for sound and music is the common denominator in the audio business, from the manufacturers of audio equipment to the bands and artists that rely on their tools. This passion is almost palpable at Sennheiser, and is reflected by the products the company offers for the live sound business.

Wired evolution Series Stage Microphones

Designed with the aim of providing a complete range of microphones for vocals and backline, evolution microphones were launched in 1998. Since then, they have become a standard on stages around the world, and are known as rugged, reliable tools for the live sound engineer. The evolution 600 line offers instrument microphones for the complete backline, while the 800 line are vocal microphones that cater for any stage situation.

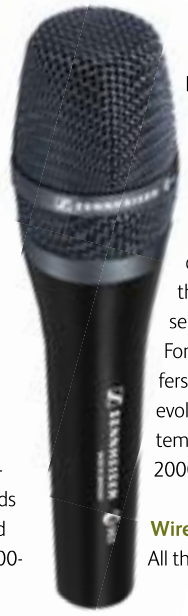
The most recent line, the award-winning evolution e 900 series, is the pinnacle of evolution live microphones, including both vocal and instrument microphones. The range encompasses everything from dynamic drum mics (the e 901, e 902, and e 904) to the e 906 guitar amp mic and small-diaphragm condenser models such as the e 914 and the clip-on e 908. Vocal microphones are the cardioid e 935, super-cardioid e 945 (both dynamic mics), and the e 965, a true condenser, large-diaphragm stage microphone with switchable pick-up pattern (cardioid/super-cardioid).

The evolution series microphones are joined on stage by such all-time classics as the MD 421 – a firm favourite on guitar amps, toms, and wind instruments – and new microphones such as the MK 4 large-diaphragm side address mic, which excels at vocals, acoustic instruments, drums, and guitar amps.

Wireless Microphone Systems

The name Sennheiser has become synonymous with reliable RF wireless transmission, whether it's a small gig with just a few wireless mics on stage or a large TV event involving multi-channel systems and complex RF environments.

The Sennheiser portfolio includes a wide variety of evolution wireless G3 systems for instruments and vocals, the mic heads of the latter coming from their famed wired counterparts. Sennheiser's 2000 Series is the 'bridge' between evolution wireless systems and the company's top-of-the-range RF wireless equipment, and is equally at home on the stage and in broadcasting. Large touring productions, TV shows, broadcasts, and globally active bands rely on Sennheiser's 3000 and 5000 Series systems, SKM 5200-II handheld transmitters, SK 5212-II bodypack transmitters, and EM 3732-II dual-channel receivers, which are setting standards in multi-channel capability and reliability.



evolution e 965: the top evolution model is a large-diaphragm true condenser, switchable between cardioid and super-cardioid patterns – also available as a wireless version.

Wireless Monitoring

From the first systems in the 1990s, wireless monitoring has come a long way in becoming the standard rather than the exception. The advantages are obvious: no stage clutter, less transport costs, and every artist (and engineer) gets just the mix he or she needs, at a sensible volume level. For monitoring, Sennheiser offers its industry standard evolution wireless G3 IEM systems, as well as the new 2000 Series IEM systems.

Wireless Systems Manager

All the above Sennheiser wireless microphone systems and monitoring systems can be monitored and remotely controlled via the Wireless Systems Manager, a free software programme for Sennheiser customers. This allows the engineer to pre-programme devices prior to an event, scan the radio environment on site, and get frequency recommendations for mics, IEMs, and spares, check the RF field strength of transmitters, create control networks, and monitor the various mixes for a band via his or her own beltpack.

Large TV broadcasts and live shows rely on Sennheiser wireless equipment. (Photo: Ralph Larmann)

SENNHEISER

Sennheiser electronic GmbH & Co. KG
Am Labor 1, 30900 Wedemark, Germany
t +49 (5130) 600 0
f +49 (5130) 600 300
w www.sennheiser.com

Sennheiser UK Ltd
3 Century Point, Halifax Road
High Wycombe, Bucks HP12 3SL
t +44 (0) 1494 551551
f +44 (0) 1494 551550
w www.sennheiser.co.uk

Technology Empowers Today's Mixing Techniques

Over the last few years, the AD/DA conversion processes and DSP programming have matured to a point where digital sound quality is on a par with analogue, so naturally the focus for Soundcraft Studer has shifted to user interface and interconnectivity.

Snakes & Ladders

The surge in the use of MADI has meant that 64 bi-directional channels of audio can now be passed over a pair of fibre-optic cables instead of expensive copper snakes, so the route from Stagebox to console has not only been simplified, but the cost has been dramatically reduced.
The MADI interface has also enabled a simpler way to record to hard disk or use plug-ins. Soundcraft recently announced that the Vi Series can be integrated with the Waves MultiRack system or similar to a PC or Mac computer. This ties in directly to the existing MADI ports on the console so no further hardware is required to use these plug-ins, or record and playback from a DAW system, since the console's direct outputs and inputs can be patched to the MADI ports very easily. Recordings can then be used for 'virtual' soundchecks.

Touchscreens – Indispensable – Replacing Nested Menus

Our patented Vistonics system was introduced on the Studer Vista 7 in 2002, and variations of this ground-breaking touchscreen and rotary encoder user interface have been incorporated into the Soundcraft Vi Series of consoles. We choose, however, to use touchscreens to control the channels, rather than to provide a set of nested menus on a centrally located screen, which distracts from the creative aspects of mixing.
Where touchscreens are used on channels, they enable the engineer to quickly control parameters. We have recently seen a shift away from engineers using centralised screens in favour of more direct channel controls.

Wireless Remote Control – Keep Taking the Tablets

Tablets are everywhere now, and the iconic one is of course the Apple iPad®.

Many mixer companies now offer an iPad-based remote controller for their consoles, and Soundcraft is no exception, having just announced the Soundcraft® ViSi Remote app for the Vi Series and Si Compact range of consoles. The advantage of this app is that it uses Harman's proprietary HiQnet networking protocol to communicate from consoles to wireless router.

This topology allows us to control multiple consoles of Vi or Si Compact variety on the same network from a single iPad, or control one console from multiple iPads. This latter use is a major benefit to on-stage performers who can control their own monitor mix from their iPad, which may be mounted onto a mic stand, while the former means that both FOH and monitor consoles can be controlled from any position in the house.

Networking & Interfacing

MADI is just one of the audio transport solutions available to us at Soundcraft Studer. Our I/O topology has enabled us to develop interfaces for Aviom®, CobraNet®, AES/EBU, Dolby® D/E and SDI based systems, and we have announced our plans for Dante, AVB, and BLU Link interfaces as well. This helps us integrate with a wide variety of systems such as personal monitoring, loudspeaker control, processing and distribution and broadcast systems.

Power-Packed DSP

Not content with providing digital consoles that sound great and are easy to use, Soundcraft Studer has also packed a tremendous amount of processing into the DSP. Dynamics and delays on every input and output, graphic EQs on all buss outputs in addition to integral Lexicon effects, engines offer more processing than probably any other digital console on the market – for example an Si Compact 24 holds the equivalent of some 176 rack units' worth of signal processing! What's more, it's all available, all the time, so there's no compromise between FX or EQ: use it when you need it.

Soundcraft Studer uses technology to improve the mixing experience, our users testify to that.

Soundcraft-Studer
Cranborne House, Cranborne Road,
Potters Bar, Herts EN6 3JN
t +44 (0)1707 665000
f +44 (0)1707 668159
w www.soundcraft.com / www.studer.ch

Waves SoundGrid

Waves SoundGrid® is an innovative networking and processing platform for real-time professional audio applications.

Ideal for live sound, post production facilities, broadcast and beyond, SoundGrid is an Audio-over-Ethernet networking and processing system that provides an extremely low latency platform for high precision Waves processing on DiGiCo, Yamaha, and Allen & Heath consoles.

SoundGrid audio processing, connections, system configuration, and monitoring are controlled by the MultiRack control application (which is also available as a Native host, compatible with virtually any console.) Running on either the console's embedded computer or an external unit, MultiRack displays rows of virtual plug-in Racks, each of which chains up to eight Waves plug-ins and lets you change entire set-ups seamlessly between or even within songs, instantly.

MultiRack Native and MultiRack SoundGrid are currently used by Front-of-House and Monitor engineers for the biggest names in show business: Beyoncé, Rihanna, Katy Perry, Lady Gaga, Celine Dion, Shakira, Taylor Swift, Britney Spears, Coldplay, Bon Iver, White Stripes, Linkin Park, Beastie Boys, Aerosmith, Norah Jones, Beck, Christina Aguilera, Bruce Springsteen, Snoop Dog, Maroon 5, Paul Simon, James Taylor, Carole King, Rush, Nine Inch Nails, Phish, Arctic Monkeys, Ozzy Osbourne, Kelly Clarkson, Shania Twain, Iron Maiden, Jane's Addiction, and many others.

Process • Record • Soundcheck

Process live audio channels in real-time with super low latency, store and recall your plug-in and rack settings, take advantage of side-chain routing capabilities, control your parameters using MIDI, and safeguard your set-up with SoundGrid's redundancy and recovery safety net.

Record MultiRack-processed tracks in real-time, direct-to-DAW in the same computer, pre- or post-processing – or both, for maximum flexibility. Best of all, there's no need for an additional computer or I/O to record your show: simply set up your virtual routing and hit 'Record'.

Adjust your plug-ins, racks, and console settings – without having the band on stage: simply play back a previously-recorded show routed through MultiRack, and let your Virtual Sound Check begin.

The world's leading developer of professional audio signal processing solutions, Waves received a Technical GRAMMY® award in 2011 in recognition of its contributions to the music industry. Waves plug-ins are heard day in and day out on hit records, major motion pictures, and top-selling video games the world over. From recording, mixing, and mastering to post production, consumer electronics, live, broadcast and beyond – where there's sound, there's Waves.

Tech Talk

Taking advantage of today's extraordinary CPU power and the memory capabilities of Native processing, SoundGrid runs on standard CPUs running a Waves-customised Linux OS, providing the predictability, stability, and low latency that was previously exclusive to dedicated DSP-based systems. In addition to running large numbers of Waves plug-ins, SoundGrid can run extremely CPU-intensive plug-ins that are even beyond the capabilities of dedicated DSP-based systems.

SoundGrid combines the power of separate computers:

- The SoundGrid Server, the "number cruncher", which performs the audio processing. Audio is streamed from the audio interface to the server, gets processed at low latency, and is streamed back to the interface, according to the audio connections established using the MultiRack SoundGrid control software.
- The SoundGrid Host, a standard Windows or Mac computer that runs MultiRack SoundGrid.

SoundGrid systems can be easily configured for optimal effectiveness per channel-count, processing capabilities, routing, and sample rate, and are easily scaled and expanded by adding I/O or processing devices as required.

Waves offers three fully SoundGrid-compatible plugin bundles which were hand-picked especially for FOH and Monitor engineers: SoundGrid Prelude (12 plug-ins), SoundGrid Essentials (28 plug-ins) and SoundGrid Pro, featuring over 70 plug-ins.

For live sound, broadcast, post production, and more, SoundGrid is a powerful, cost-effective, all-in-one audio networking and processing solution.

WAVESLIVE

Waves

w www.waves.com

I-TECH 4x3500HD
DRIVECORE SERIES

MORE FLEXIBILITY. NO COMPROMISE.
NO COMPARISON.

The I-Tech DriveCore™ series of amplifiers represents decades of work developing and refining amplifier technology that pushes the limits of sound reinforcement. It started in 1967 with the world's first solid-state, high-powered amplifier with unsurpassed reliability and it continues today with the **first tour sound amplifier offering four inputs routable to any output** (analog, AES3, VDrive, or CobraNet), the new I-Tech 4 x 3500HD.

Boasting eight patents – three on the power supply alone – and the amplifier industry's first integrated TFT LCD full-color touchscreen, the I-Tech HD DriveCore series offers a switching power supply with PFC and Crown's patented Class-I output stage, resulting in greater fidelity at high and low power levels, more efficiency with less waste heat, and unparalleled reliability.

Learn more at crownaudio.com.

DRIVECORE™

A culmination of nearly two decades of R&D, DriveCore is a HARMAN exclusive that combines hundreds of parts into one chip the size of your fingertip, resulting in higher efficiency and unsurpassed reliability.

BSS OMNIDRIVE HD DSP

With the latest programmable studio-grade 32-bit Sharc® processor, FIR and IIR filters, and coordinated LevelMAX™ limiters, this integrated DSP outperforms many of the best standalone DSP loudspeaker processors in the world.

© 2012 Crown Audio

DPA MICROPHONES

d:facto™ Vocal

DPA takes center stage

Building on the loved qualities of the legendary DPA 4011, DPA brings the studio sound to the live stage.

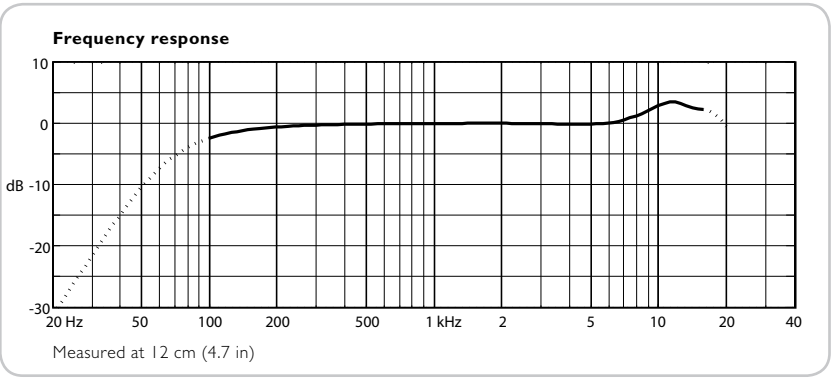
With the new supercardioid d:facto™ vocal mic, DPA has once again raised the bar. Expect the unexpected.

Key features

- Extreme sound level handling, 154 dB
- 3-step pop-protection grid
- Suppression of handling noise
- Ready for wireless use
- Impressive definition, accuracy and freedom of coloration
- Superb linearity in frequency and phase, even off-axis

The perfect curve

Exceptionally linear response delivers the highest gain before feedback without EQ



Measured at 12 cm (4.7 in)

www.dpamicrophones.com/dfacto